THE·BRICKBVILDER

VOLUME XXIII NUMBER 6

CONTENTS *for* JUNE 1914

PLATE ILLUSTRATIONS

Architect Plate

HOUSE, 14 EAST 76TH STREET, NEW YORK, N. Y. .... *York & Sawyer* 90, 91
HOUSE, THOMAS PRINGLE, ESQ., PITTSBURGH, PA. .... *Thomas Pringle* 95
HOUSE, E. F. ROBBINS, ESQ., PASADENA, CAL. .... *Myron Hunt* 92–94
LIBRARY, PUBLIC, BEVERLY, MASS. .... *Cass Gilbert* 81, 82
MUNICIPAL AND POST OFFICE BUILDING, SOUTHAMPTON, L. I. .... *F. Burrall Hoffman, Jr., and Hiss & Weekes, Associated* 85
POLICE HEADQUARTERS AND DISTRICT COURT, SALEM, MASS. .... *John Matthew Gray* 86, 87
POLICE HEADQUARTERS, DISTRICT COURT AND FIRE STATION, MARLBOROUGH, MASS. .... *Bigelow & Dyer* .... *Edward Percy Dana, Consulting* 88, 89
REFRESHMENT BUILDING AND BAND STAND, BOSTON, MASS. .... *William Downes Austin* 96
SCHOOL, THORNDIKE, EAST CAMBRIDGE, MASS. .... *Charles R. Greco* 83, 84

LETTERPRESS

Page

DRAWING OF RED BANK TRUST COMPANY BUILDING, RED BANK, N. J. WARRINGTON G. LAWRENCE, ARCHITECT; FLOYD YEWELL, DEL. ... *Frontispiece*
USE OF COLOR IN ARCHITECTURE, THE .... *Birch Burdette Long* 125
Illustrations from Photographs
PRIVATE LIBRARY, THE .... *H. T. Bottomley* 130
Illustrations from Photographs and Drawings
BATHING POOLS WITHIN AND OUT OF DOORS .... *Wilfred Carew* 135
Illustrations from Photographs
COLONIAL DOORWAYS OF BALTIMORE, MD. .... *Riggin Buckler* 140
Accompanied by Photographs and Measured Drawings of Selected Examples
MONOGRAPHS ON ARCHITECTURAL RENDERERS .... *Ed. Review* 143
VI. The Work of Floyd Yewell
Illustrations from Drawings
COMPARISON OF THE STRUCTURAL EFFICIENCY OF I BEAMS, A .... *Frank H. Carter, C.E.* 147
EDITORIAL COMMENT AND NOTES OF THE MONTH 148

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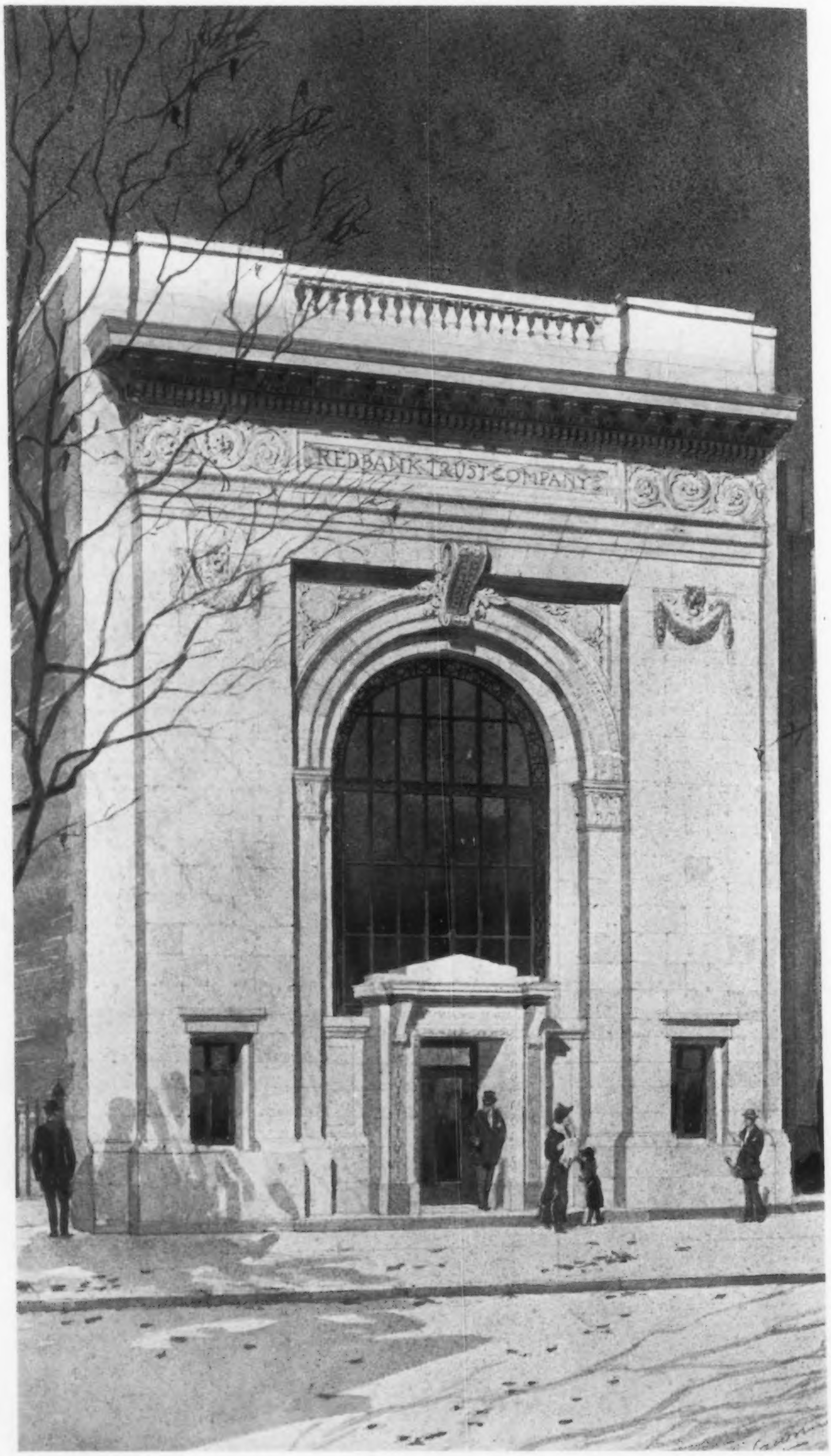


RENDERED DRAWING OF RED BANK TRUST BUILDING, RED BANK, N. J.

WARRINGTON G. LAWRENCE, ARCHITECT
FLOYD YEWELL, DELINEATOR

THE BRICKBVILDER

VOLUME XXIII JUNE, 1914 NUMBER 6

The Use of Color in Architecture.

By **BIRCH BURDETTE LONG.**

THE use of color in architecture is a problem than which there is none more fascinating to practitioners of the art, nor is there any branch of the profession in which failure is more frequent, nor disappointment more keen than in this. We have been here in America through an experience of a general and successful revival of architectural taste which has expressed itself not alone in our churches, our residences, and our public buildings, but also in our hotels, stores, and even factories; and examination of these buildings will show that we have depended immensely upon purity of line and delicacy of detail and little upon the factor of color, either for all portions of the building or for the decoration of specific portions. Our lack of success in this respect has been probably due to two causes — the first being that so much of our architecture of the Victorian period was lavishly colored, and in our revolt from the execrable work of that time we have come to regard its good qualities in the same rank with its bad. The other and principal reason is, I think, the difficulty of selecting materials to produce the desired effect; it is, of course, easy to suggest a color scheme in a rendering, assuming that the man making the rendering has himself an accurate feeling of color; but as the success of the color scheme of a rendered drawing depends, not upon the positive colors in the drawings but on their relations to each other, one can hardly use the rendering as a sort of sample and match the materials to it. Even if the coloring of the materials in the sketch could be exactly matched in the building, two of the colors in every rendered drawing, namely, the foliage and the sky, cannot be artificially harmonized in the completed work, and the result will not approximate that indicated by the sketch. This does not mean that the rendering is necessarily false, since its purpose is mainly pictorial, and if it conveys to the eye a correct impression of the completed result, it is successful in its purpose because the *comparative* values of the colors are correct, and not their positive values. In order to make this point perfectly clear take, for example, an exhibition of paintings: one finds not infrequently landscapes which are similar in character, which convey to us the impression of having been painted, at not only the same season, but at the same time of day, and which impress us equally with their sincerity and accuracy; but comparison between them will show that the color scheme is entirely dissimilar — the sky in one may be mauve, where in the other it is blue, and the grass yellow in one and blue in the other.

These pictures are satisfactory, not because the absolute colors appear as they do in nature, but because the relationship established between them varies in the same degree that it does in nature; we are not apt to see color absolutely, but comparatively. The architect therefor who endeavors to follow the color scheme of a rendering should remember that he is seeking not for the identical colors but for those which will convey a similar impression.

Most architects whose work is pleasing in its relationships of color have succeeded by begging the question, and by using in place of really positive colors, monotone schemes, or by including a few very simple colors which years of experiment have proven to be satisfactory. Let us take two examples of monotone color schemes which are each highly successful: the big waiting room of the Pennsylvania Station is perhaps one of the most beautiful rooms in America — warm, sympathetic and rich — but the scheme is essentially a monotone in a dull light brown or buff, relieved only with the pale blue and tan of the maps placed high up on the walls which are after all not so much different colors as variations of the brown tone. Of similar type as regards color scheme, although an example completely different in character, is the house designed by Messrs. Albro and Lindeberg, at Easthampton, in which the basic tone is again the warm buff of the stucco, which is repeated in slightly darker color in the roof, brightened by white trim and very dull green blinds. It is essentially a one-color scheme, since the green is dulled to such a degree that it is hardly a distinct color, but rather a variation of the ground tone.

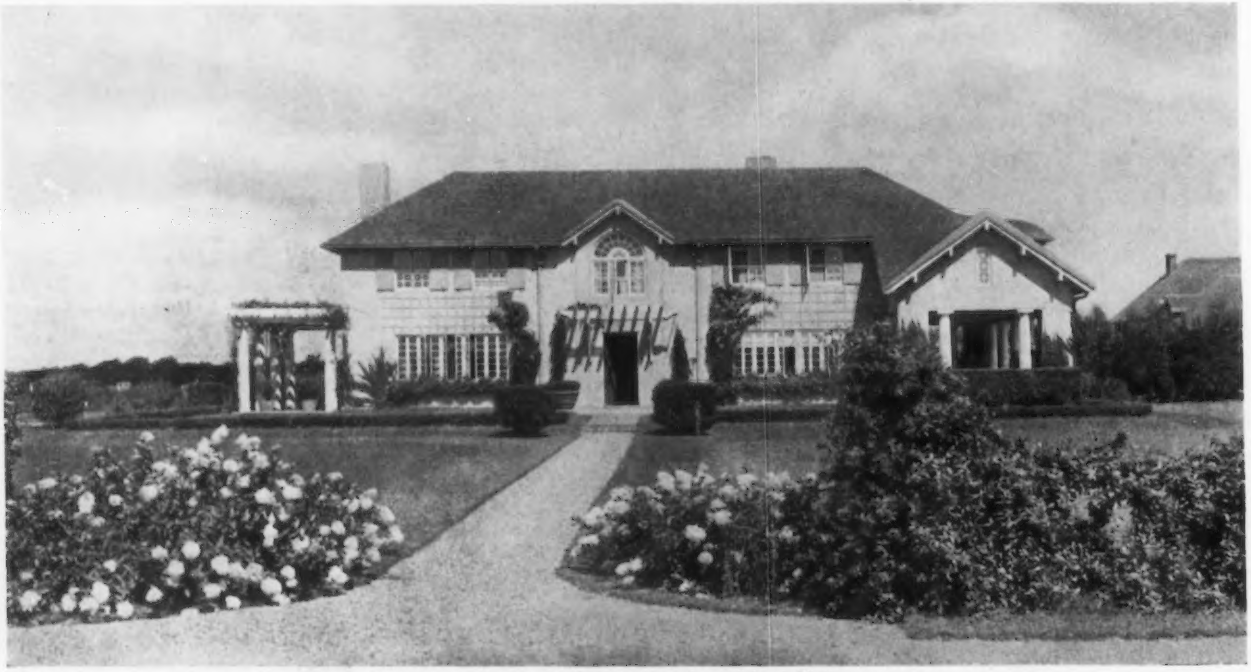
The two examples above described have exactly the same qualities of suggestion of color that a first rate black and white drawing or etching has: one feels almost sure that they are full of color (as in a certain way they are), but it is one color with variations, not a combination of several colors.

The other class of colors in which success is easy, because there has been so much experiment in them that no particular thought is required about the color scheme, has one prominent example — the green and white of Colonial architecture. A white house, with either light or dark green blinds, and a roof of a shade of green to harmonize with the blinds (easy for even an uncultivated color sense to find), or with a roof of any neutral colored brown or gray, could hardly fail to be a success from the point of view of color; and the knowledge of this is so widespread that the first thing which an architect prescribes when he is asked to improve a house is often to paint it white with green blinds. Now I do not imagine that this combination of white and green is the only good one possible for a house, but as the average of Colonial houses which were painted in these colors was much higher than the average of our country houses painted in any other color combination, we have become accustomed to regard any green and white house as being pretty good, and to accept it as pretty good, because of the slovenly and unanalytical train of thought that we are to follow when our attention is not especially aroused.

Aside from the classes of structures which we have just mentioned we find that pretty nearly all of our buildings have been done in a strict monotone, relieved only when the material is changed, and even then if the additional material can be made to approach in color the basic tone, it is very frequently so used. We have numerous examples of this style which are so familiar that no illustration is necessary: perhaps the one we have most often seen being the office or loft building in which the lower stories are of limestone, the shaft of brick, matching the limestone as closely as can be, the crown of terra cotta fashioned like limestone, and the window trims painted white or dull gray. Nor am I prepared to say for a minute that this decent and orderly succession of materials would be bettered by varying them in color. As a matter of fact as most buildings of this type are designed, the reverse would probably be the case, and yet a much more interesting building could be conceived in which the motives themselves were adapted to the use of color, and executed with its very liberal use.

Nevertheless the fact remains that where color has been used in buildings of this class, even in a timid and hesitating way a greater variety of effect and interest of treatment has been secured than could possibly have been the case without it. Take, for example, the Dreicer building; this is a rather low store building of good proportions, and of excellent detail, executed in limestone for the most part, but with the lower story of black and gold marble with gilded capitals; the metal work of the window and door frames is again gold colored, and this lower story has an extraordinary richness, which would hardly be possible in any other material. The building looks like a jewelry shop, and is intended so to look, and although in the photograph the lower story does not appear stable enough to support those above, in reality there is no such feeling, except that one realizes that the pilasters are not structural, but purely ornamental, which is quite as it should be. Beyond the first story the architects dared not venture, and while the building is admirably successful as a whole, in monotone, it might have been still more attractive had a color scheme been worked through the upper stories so as to make the contrast between the upper and lower portions of the building a little less hard and definite.

Of course the use of color in a building composed of purely natural materials is always a little difficult, since nature affords us a limited palette with which to work. In stone there are few varieties, white, gray, reddish brown and buff being those readily accessible, although curiously colored green limestone has been used in some very poorly designed buildings of the University of Pennsylvania and the University of Virginia, and is never used now, principally, I suppose, because those buildings were unattractive, and their faults were assumed to include their color. Now, as most of the decorative motives which were employed have been transmitted to us through the medium of stone architecture, we have more or less unconsciously imitated with these forms, in our artificial materials the stone colors, with the single exception of brick, which has a natural color of its own. Even in brick there have been constant attempts made to produce a surface texture, graining and color like that of stone, and the same effort, many times magnified, is apparent in our buildings of terra cotta. Now, architectural terra cotta, like brick, is a rational



Country House at Easthampton, Long Island, N.Y.
Albro & Lindeberg, Architects

and sensible building material, with attributes which are individual to it, and of which, up to the present time, we have not made the most, but have preferred to treat it as an imitation stone. This practice has been so universal that we can see terra cotta thus constructed without feeling its impropriety, although when we can go out into the country and see a building built of cement blocks surfaced like rock-faced ashlar, we instantly realize its falsity and dislike it for that reason. Brick has had worked out for it during the many centuries of its use a rational and decent system of ornament and of construction; brick cornices do not imitate stone forms, although they occupy the same positions and have the same apparent weight.

Dreicer Building, Fifth Avenue, New York
Warren & Wetmore, Architects

It is good to see most architects coming back to a simple and rational use of brick after fostering, in the attempt to achieve the unusual, a demand for textures and colors foreign to their nature. We are now able to find colors other than white which harmonize with the various tones of red of the brick. An excellent example of the current method of using brick is the Barge Office in New York City, which was designed during the term of office of Mr. James Knox Taylor, as supervising architect of the Treasury. While brick is the principal material used, and the building is evidently a brick structure, Mr. Taylor has not hesitated to introduce practically the whole range of other building materials suited to fireproof structures into the ornamental parts of the design; and while the result in the photograph is satisfactory, the executed building is still more so. Let us enumerate these simply for the sake of showing how many colored materials there are which can be used in combination with brick: the bases of the piers are granite, their capitals limestone, the rope ornament around the architrave of the arches is also of limestone, while the concluding ornament of the architrave is terra cotta with some color; the diamond pattern insets are of brick and matt glazed tiles, the tiles in a number of different shades, the corbels under the pilasters at the second story and the caps of these pilasters are of limestone, while the frieze between the little brick arches above the windows is again of colored tiles. The lower part of the cornice is limestone and the upper part of copper, with a green tiled roof. The columns, acting as mullions, are of marble with terra cotta caps; and thus we have an assemblage of practically every one of the building materials which are ready to hand, but there is no incongruity apparent in their several uses, and they have an excellent fitness to their purposes in design as well as in color. The pattern brickwork in this building is again worthy of remark, since the patterns have been made quite as much by the selection of various shades of brick as by the jointing.

Detail of U. S. Government Barge Office, New York
James Knox Taylor, Architect

Another of the schemes for introducing color into buildings which is of recent development is through the employment of sgraffito work, and there are illustrated in this article two very notable examples of its use. The Alexander Building is a combination of limestone and sgraffito, with a marble trim around the show window of the first story. Some of the sgraffito is raised, but most of it is flat, and the colors are extremely simple, the background being brown, while the ornament is worked out in color, not very different from that of limestone. The other building in which sgraffito is used is the Booth Theatre. As has been unfortunately the case with much of the work in which color has been liberally introduced, the design cannot be as heartily admired as one could wish ; but the principles of the application of the ornamentation are sound and commendable, as is the freedom of the building from too close imitation of stone forms. It is, of course, true that much of it is evidently a derivative of stone ornamentation, and yet is used in so free a way as to redeem it from a suspicion of stereotyped copying. The color of this building is derived from four different materials — terra cotta, marble, brick and sgraffito. Most of the fine ornamental work of the bands and amusing detail is in a lavender or violet colored background of sgraffito with the patterns nearly white. For the most part the terra cotta is in monotone, but where color has been thought necessary by the architects, they have not hesitated to use it, and in fact the whole building has been worked out, not as a monotone scheme, but as a polychrome one, the colors employed being gray, white and lavender for the brick, architectural terra cotta and sgraffito, respectively.

There is one other building which must be included in any discussion of the use of color deco-

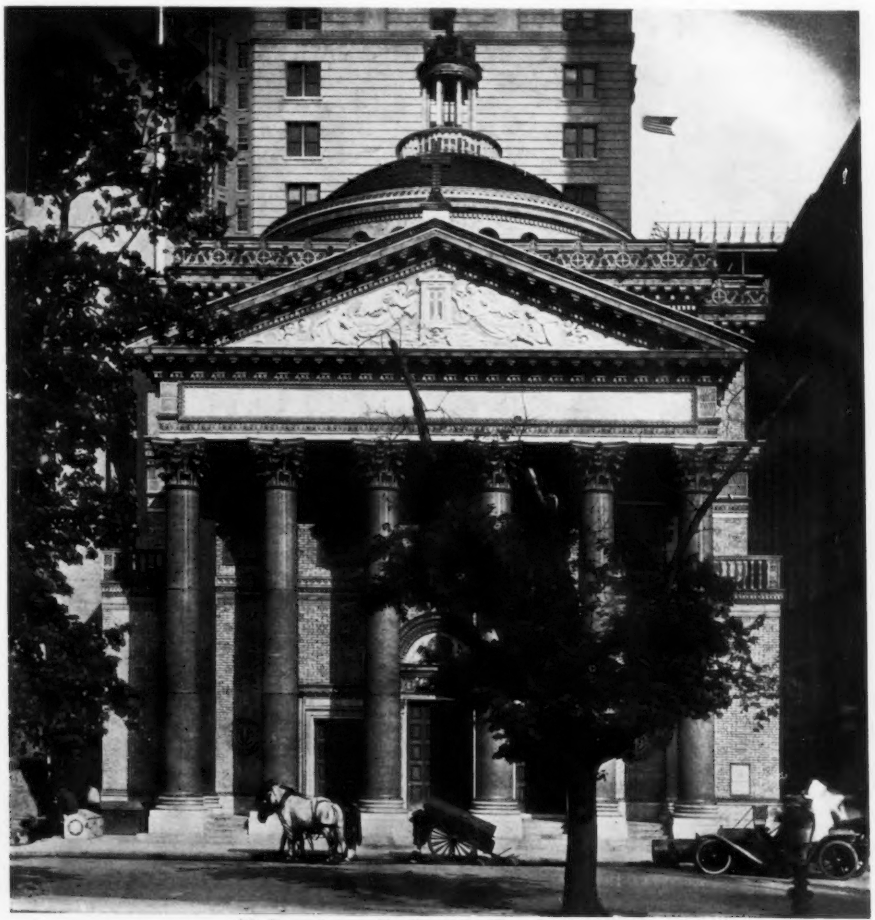

Alexander Building, Fifth Avenue, New York
Carrère & Hastings, Architects

The Booth Theatre, New York
Henry Herts, Architect

ration, and unfortunately to my theory that colored terra cotta should not reproduce stone forms, it is the Madison Square Presbyterian Church in which a stone pattern as well known as the Corinthian capital has been executed in terra cotta with excellent results. This building is in the main of gray brick with a little color introduced into the brickwork, the columns are of greenish marble, and the frieze of a curious blue and yellow marble; but the cornice, the ornamental patterns, and the cupola are all of yellow white and blue terra cotta, and the sculpture executed by Mr. A. A. Weinman in the pediment, which is Della Robbia in design, is likewise Della Robbia in coloring. Now, although this building is full of unusual and interesting colored terra cotta, the general effect is not that of a polychrome building, but that of a monotone one, and if there is anything in the principle that colored terra cotta should not imitate stone forms, which this most successful building seems to confute, the explanation may lie in the fact that the balusters, cornice, cupola and the cheneau are of low projections and of an intricacy and delicacy of detail which is foreign to architecture which is really stone, and in spite of this tremendously successful building in colored terra cotta, I believe that color which is introduced into a building through an artificial material should not hesitate to express the material of which it is composed.

One other point which should be borne in mind in designing a structure is the proper effect of age and deterioration on materials; a good many of the colors, for example, those used in stucco, are fleeting; even brick and glazed tile change color through age, so we find that the architect must always bear in mind, not only the color scheme of his building at its completion, but also its probable change of tone during a few years after its construction in a city where dust, soot, and the acid fumes from chimneys attack and change almost any color, no matter how permanent it may be when fully protected.

I have taken up in this article the principal aspects from which the use of color is usually regarded, and also the principal materials in which colored work is usually executed; but it is, of course, impossible to do justice to such an enormous subject in so few words and with so few illustrations. The subject is one which is immensely interesting to architects, and especially to a man whose livelihood has been dependent upon his knowledge of color, and while I have illustrated the article with photographs of buildings of good design, they each represent a class of work of which the vast majority is not completely thought out and is unintelligently executed.



Madison Square Presbyterian Church, New York
McKim, Mead & White, Architects

The Private Library.

(Continued from the April Issue.)

By H. T. BOTTOMLEY.

IN A private library the comfort and the decorative effect are both dependent upon two things: the general proportions and the lighting by day and by night. On these two fundamental considerations will be found to hang all the livableness of the finished room. Mere size has nothing to do with the charm of a library. One of the most successful that I know measures only twelve by eighteen feet, but the relating of its component parts to each other and to the general measurements of the room is of vital importance.

Proportion is that attribute of any design which concerns the arrangement and adjustment of its elements. If we would achieve good proportion in our libraries, there are rules to help us — simple enough most of them are — rules of composition which the dissectors of design have discovered for us. They are undoubtedly helpful, but we may follow all the laws that have ever been laid down and yet the result may be cold and dry. Balance, repetition, symmetry, contrast, are all factors of good proportion, and yet to attain success the designer must put vitality and imagination into his work — not a feverish striving after originality, but a constant seeking for "truth which is old and yet ever new." The component parts of the shell of the room are the openings: the fireplace, windows and doors; and the solids: the floor and ceiling and the wall spaces. The wall spaces, though really no more important than the other parts, should be given special consideration on the plan, for when the room is finished it is they that will appear to be the room; they should be large and simple, punctuated symmetrically by the openings and so planned that the books and furniture and lighting fixtures may be conveniently arranged. By the placing of the openings, the comfort of the room will be made or marred. The fireplace — there must be a fireplace if only because of its attraction for the idler — should be away from the main entrance door, so that those seated around it may have greater privacy. The windows should be accessible, and the doors as few as possible under the conditions governing the plan.

In general, with reference to the design of the private library, it is safe to say:

1. Make the windows large.
2. Make the doors small.
3. Make the ceiling high in proportion to the floor area.

Usually the floor area of any room, for one reason or another, is limited. Either it is to be in the city where party walls not only define but almost invariably confine it, or it is in the country where space is unlimited but where such practical questions as the number of books to be housed, or the relation of this room to the rest of the house, are determining considerations. Often we cannot make the shell of a room conform to our ideas and prejudices, or even to the laws of good proportion, but must accept what comes to us ready made; but in that case there are many tricks by which the eye may be fooled and bad sizes or shapes may be overcome or palliated. A white ceiling, for instance, will greatly increase the apparent height, while a beamed or coffered one or a frieze will decrease it. Large furniture will make the room seem smaller than it really is. If the center is kept open and free from furniture, the size to all intents and purposes will be greatly increased.

The lighting of a library, that is the arrangement of the windows, is very closely allied to its proportions. Symmetry and balance in their placing will be found to increase its livableness. An abundance of light is unquestionably of vital importance and the artificial lights, as well as the windows, should be so arranged with reference to the placing of the furniture that any one wishing to

Mantel in the Library of William G. Mather, Esq., Cleveland, Ohio
Charles A. Platt, Architect

LIBRARY IN HOUSE OF MRS. S. A. HITT, WASHINGTON, D.C.
JOHN RUSSELL POPE, ARCHITECT

LIBRARY IN HOUSE OF HENRY A. WHITE, ESQ., WASHINGTON, D.C.
JOHN RUSSELL POPE, ARCHITECT

read or write may have a flood of light upon his book or desk at any time. This does not mean that large sheets of plate glass must be used. Both from the point of view of the exterior and the interior of the house, it is well to make the windows a part of the architecture of the building — not mere gaping rectangles. Small panes separated by muntins of wood or by leads do not materially decrease the light that comes into a room, while they serve an important purpose in harmonizing the world outside with the interior.

Under ordinary circumstances the small panes increase the charm of a view. Nature is by their intervention brought into accord with the pictures on the walls and the other objects in the room.

The choice of the style and size of the windows is dependent upon the character of the house as a whole, but their treatment is largely governed by what is seen through them. A pleasant view is almost a necessity, and is usually obtainable by a little judicious planting; but if it is not all one could wish, an uneven glass may be used which will blur the outline of what is seen, and give it some of that charm which is always possessed by the unknown.

The accompanying illustrations have been chosen largely because of the very successful arrangements for lighting shown in them. The artificial lights have been well placed in every case; low reading lamps with tables to put them on have been provided near the sofas and large chairs, and well shaded lights have been placed at intervals around the walls. The torches hanging on brackets in the house in Gramercy Park are almost indispensable in a library of any size. They may be unhooked and passed along the shelves whenever a special book is wanted.

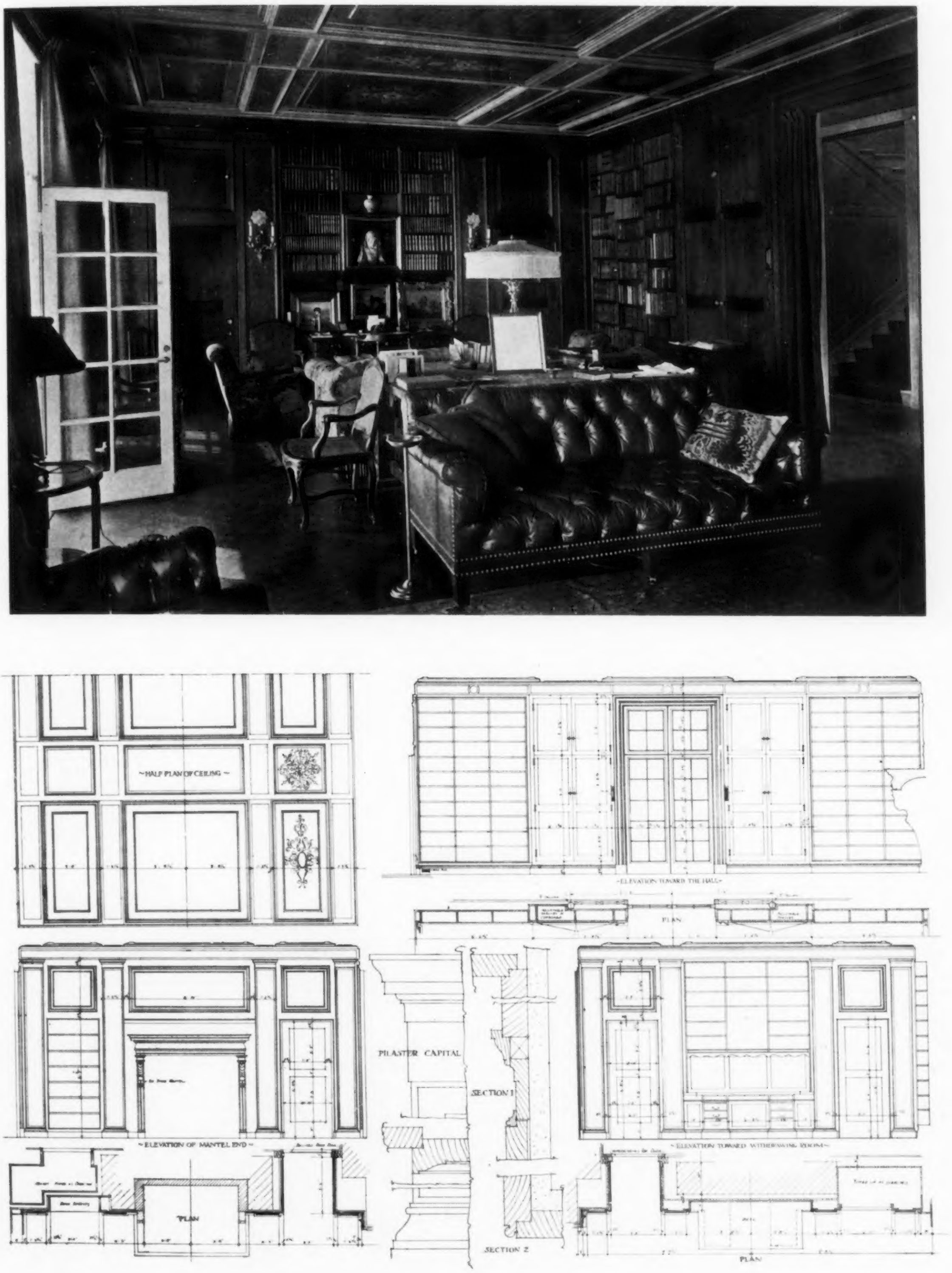
Library in House of Mrs. Alfred A. Pope, Farmington, Conn.
McKim, Mead & White, Architects

The exposure is another very important consideration in the choice of the decoration of a library, especially in the use of color. A north room should be, of course, warm in tone, and here paneling in natural woods is very effective. In a south room light, cool colors are best, and white woodwork is always lovely if the mouldings and detail are in fine scale.

A restful color scheme, however, for the entire room should always be sought after. Dignity and even a certain amount of somberness is the atmosphere which the decorative scheme should convey — qualities which are conducive to a serious, calm, and peaceful state of mind. Gay decorative treatment — intense and strong color schemes — should not be considered for a library.

Brown oak finishes which approach the neutral in color are good. These are best when obtained on genuine oak, but can be imitated on other woods, by

Library of House in Gramercy Park, New York, N. Y.
McKim, Mead & White, Architects



LIBRARY IN HOUSE OF WILLIAM G. MATHER, ESQ., CLEVELAND, O.
CHARLES A. PLATT, ARCHITECT

means of stains and fillers. The dignity of mahogany is excellent for libraries. Equally effective is the simplicity, beauty, and restfulness of mahogany and white. The white helps to reflect the light, thereby facilitating the illumination of the room — an important consideration as we have before demonstrated in a room where much reading is done. Whitewood, owing to its unobtrusive grain, is the ideal wood for white enamel finish, although any other close grain wood may be used. Birch, red gum, and maple are excellent woods for the imitation of mahogany. An acid stain on woods of sufficiently hard grain will give a clearer effect than an oil stain. In the illustration of a small library in a city apartment (in the first part of this article, April, 1914), we see a white paneled room that is beautifully worked out, not only in the wall treatment but in every detail of the furnishing.

Library in House of Geo. L. Nichols, Esq., Katonah, N. Y.
Charles A. Platt, Architect

In these days of countless fires from defective electric wiring and careless painters on the one hand, and of comparatively cheap fireproof construction on the other, it is rightly becoming more and more the custom to have the heavy construction of our houses made of incombustible materials. If the walls and floors of a house are entirely fireproof and the finished floors are made of tiles or some other material that cannot burn, there is very little danger of fire.

The furnishing of libraries is almost more important than the furnishing of any other room in a private house. I have always believed that the elements of good taste were in every human being — and yet how few of our rooms are reàlly satisfactory. The library in Farmington, Conn., by McKim, Mead & White, is a perfect example of suitability in furnishing. To begin with, the shell of the room was well designed and well carried out. Its proportions are good (though the wide angle lens of the camera has distorted them in the picture), the paneling of dark wood, the mantelpiece, the doors, the lighting fixtures, are all admirable. These fundamental characteristics are enhanced by the more temporary decorations — the table and chairs, the engravings, and the quaint clock over the mantelpiece. This room is simply furnished, as a room for books always should be. It is a fine example of a contemporary style, — a style that is — which has been used continuously since its origin by English and American architects to express the finer sentiment of the home.

A far more ambitious and very dignified room is the library of Mrs. Hitt in Washington, designed by Mr. John Russell Pope. It is interesting to note how well thought out it is in design — the line of the top of the bookcases is carried across the mantel and door and window transoms; the cornice and the architraves are carefully detailed, and the fine engravings and rich tapestry have been framed in by the mouldings of the paneling and placed where they would be most effective.

A library is the room above all others where a painted ceiling is appreciated. The detail and the color are a delight to those who are quietly enjoying its hospitality.

After the general proportions have been determined, the first thing to be considered in deciding upon the decoration and treatment of the library is the number of books and their appearance. Are they to be the chief decorative feature of the room, or merely a small factor in the furnishing of it? Are they sufficiently numerous to line the walls, or will they fill only one or two bookcases? Nothing is more decorative than built-in bookcases lining the walls with fine books — not necessarily first editions; but books to be effective must be well bound, and size, as Arnold Bennett says, "has a distinct moral value." But this treatment is possible only when there are a great many books to be housed.

Glass doors do undoubtedly protect books from dust, but on the other hand they mar the fine color effect of the bindings of the books and they prevent the air from circulating as it should to keep them in good condition. The best modern practice is to exclude dust from the library as much as possible, but to leave the books open to the free circulation of the air, which should be neither too dry nor too moist.

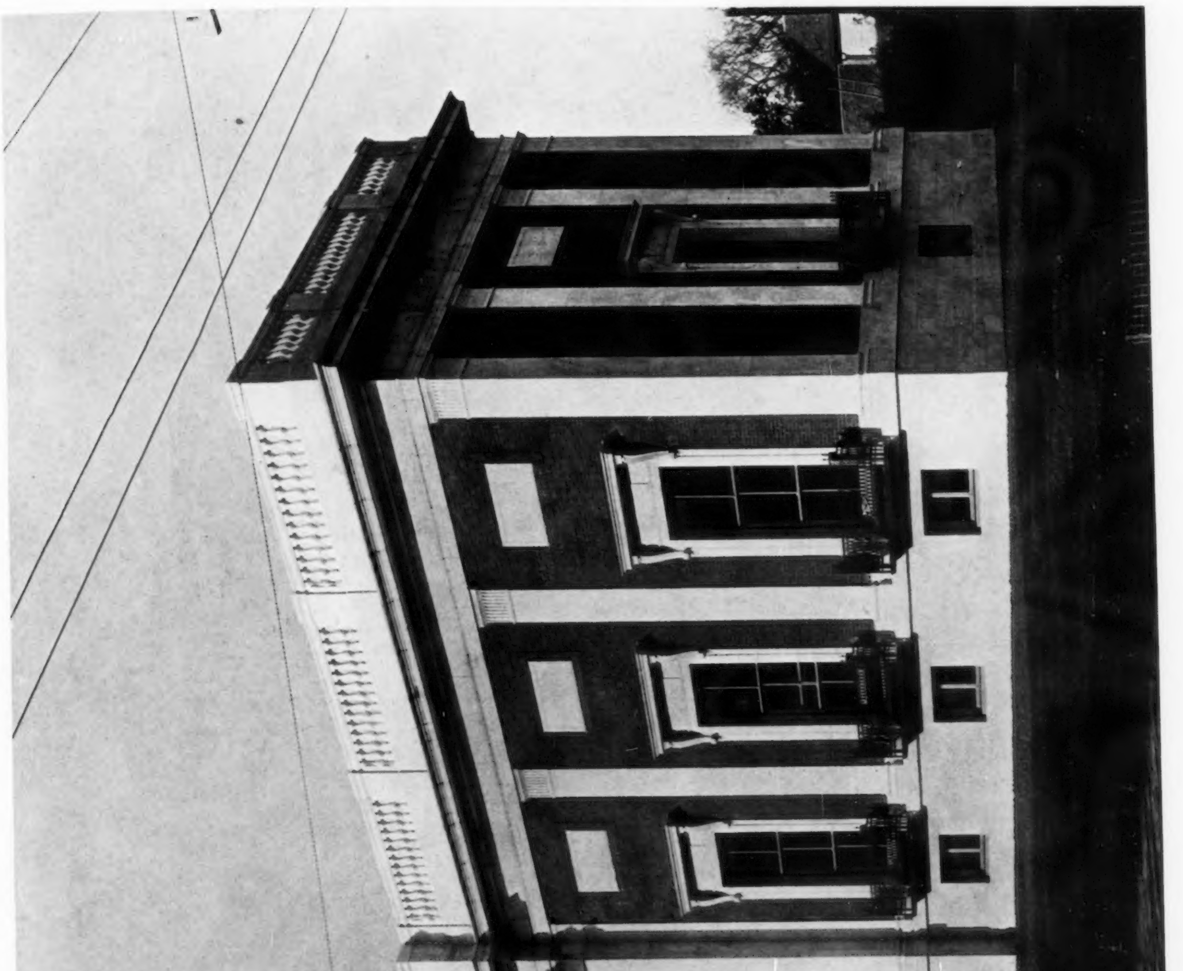
After all books are easy to dust and they lose much of their charm and personality when they are shut behind imprisoning bars. It is better to have the shelves reach no higher than one foot below the ceiling, as extreme heat dries the bindings.

In planning a library, let us remember that there are many beautiful models to study, that there are many possible arrangements, differing from those already made, and that the keynote should always be quiet, ease, literary coziness, private proprietorship; if anything more should be added, it must surely be refined hospitality to personal friends.

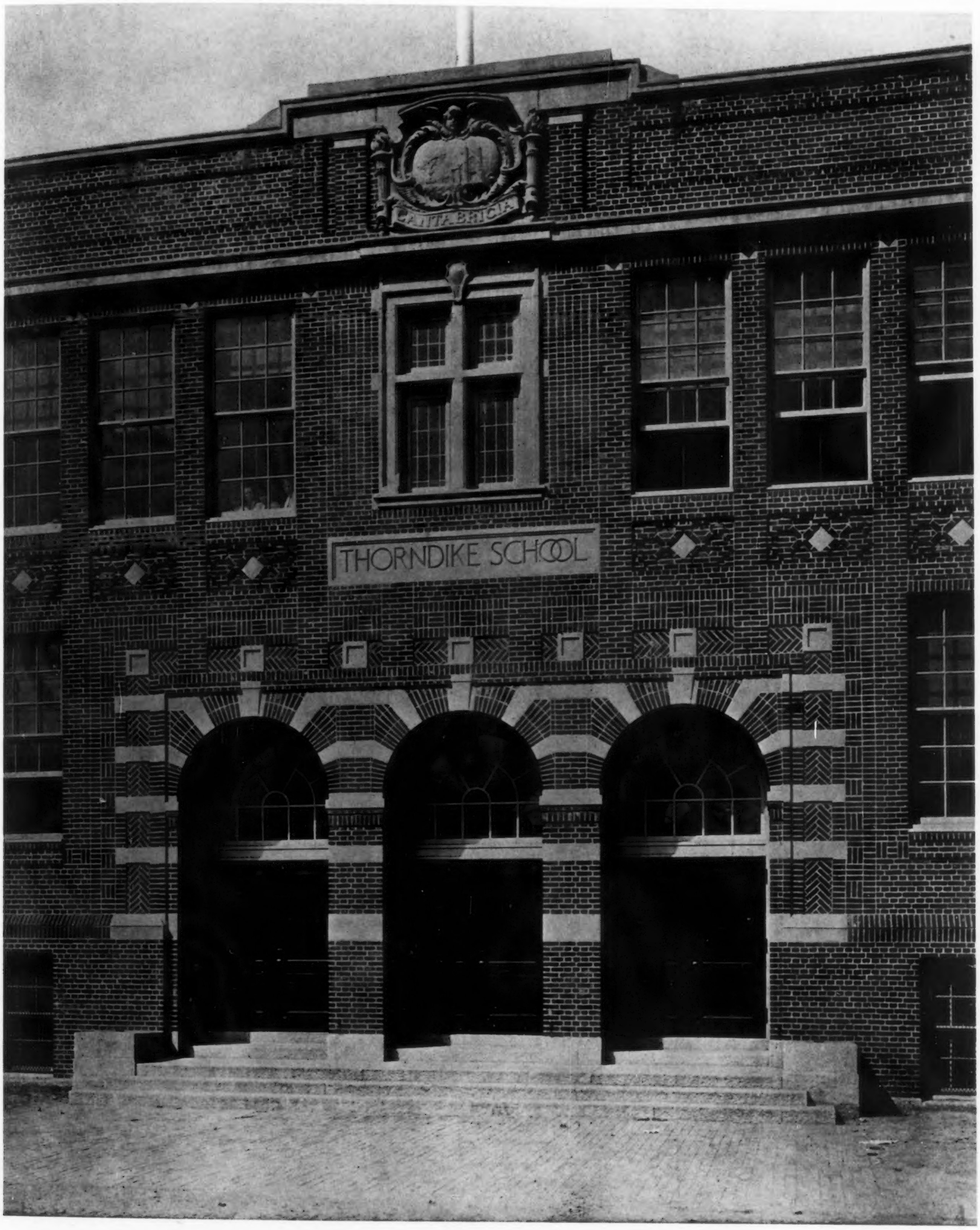
DETAIL OF ENTRANCE

PUBLIC LIBRARY BUILDING, BEVERLY, MASS

CASS GILBERT ARCHITECT

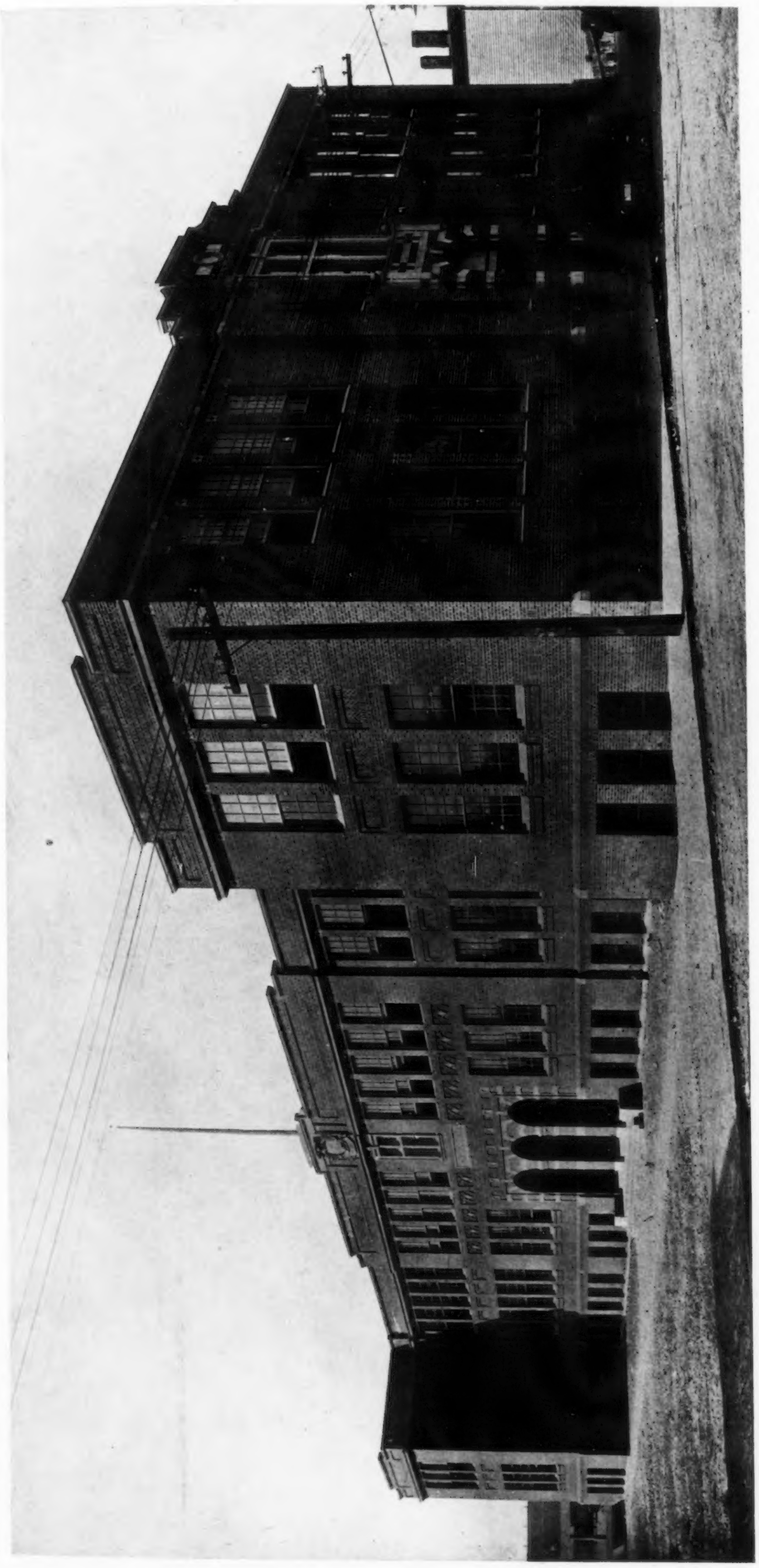


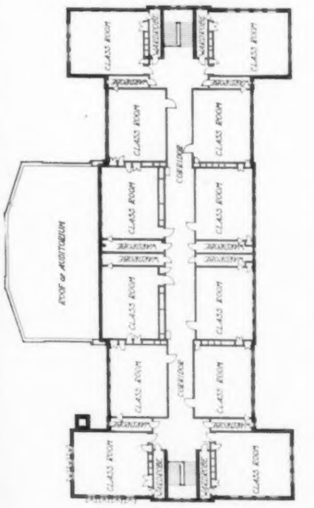
PUBLIC LIBRARY BUILDING, BEVERLY, MASS.
CASS GILBERT, ARCHITECT



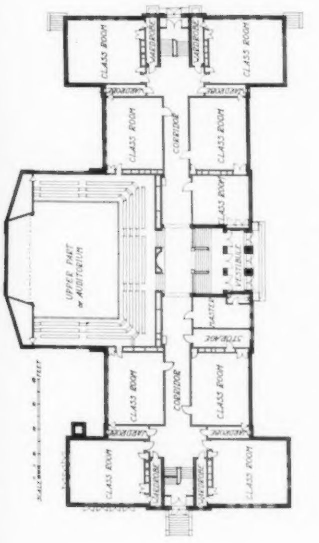
DETAIL OF ENTRANCE

THORNDIKE SCHOOL, EAST CAMBRIDGE, MASS.
CHARLES R. GRECO, ARCHITECT

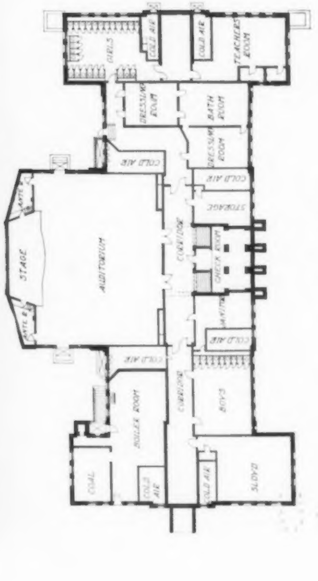




SECOND FLOOR PLAN

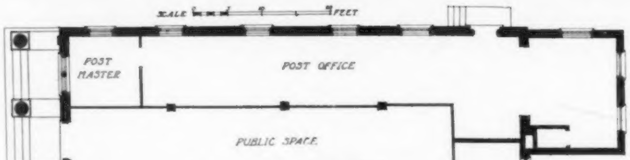


FIRST FLOOR PLAN



BASEMENT FLOOR PLAN

THORNDIKE SCHOOL, EAST CAMBRIDGE, MASS.
CHARLES R. GRECO, ARCHITECT



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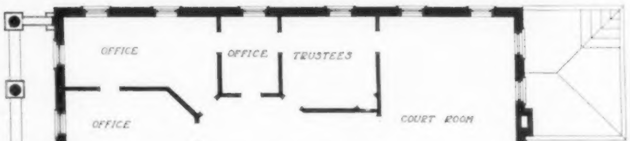
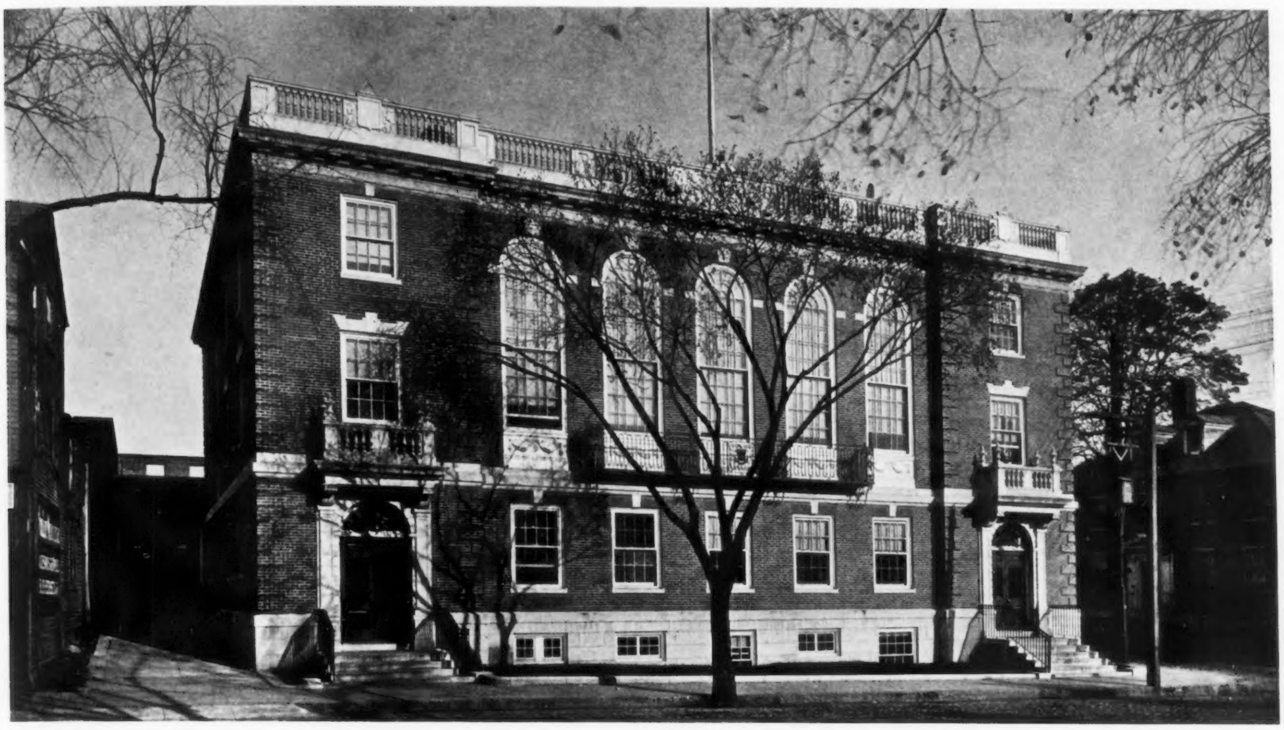
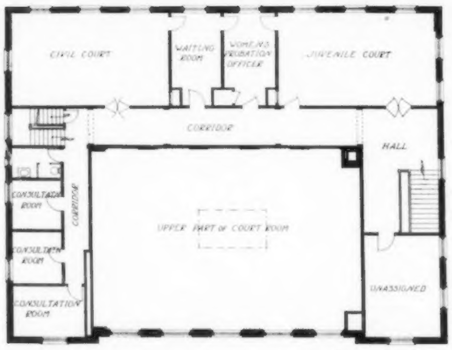


SECOND FLOOR PLAN

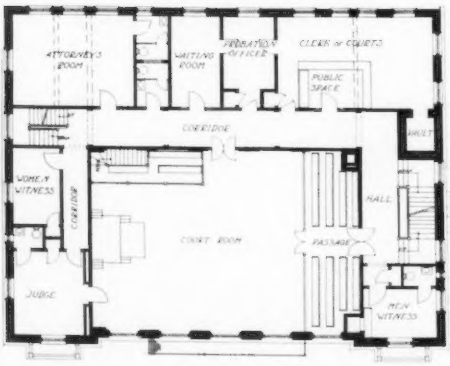
MUNICIPAL AND POST OFFICE BUILDING, SOUTHAMPTON, LONG ISLAND, N. Y.

F. BURRALL HOFFMAN, JR., AND HISS & WEEKES, ASSOCIATE ARCHITECTS





THIRD FLOOR PLAN



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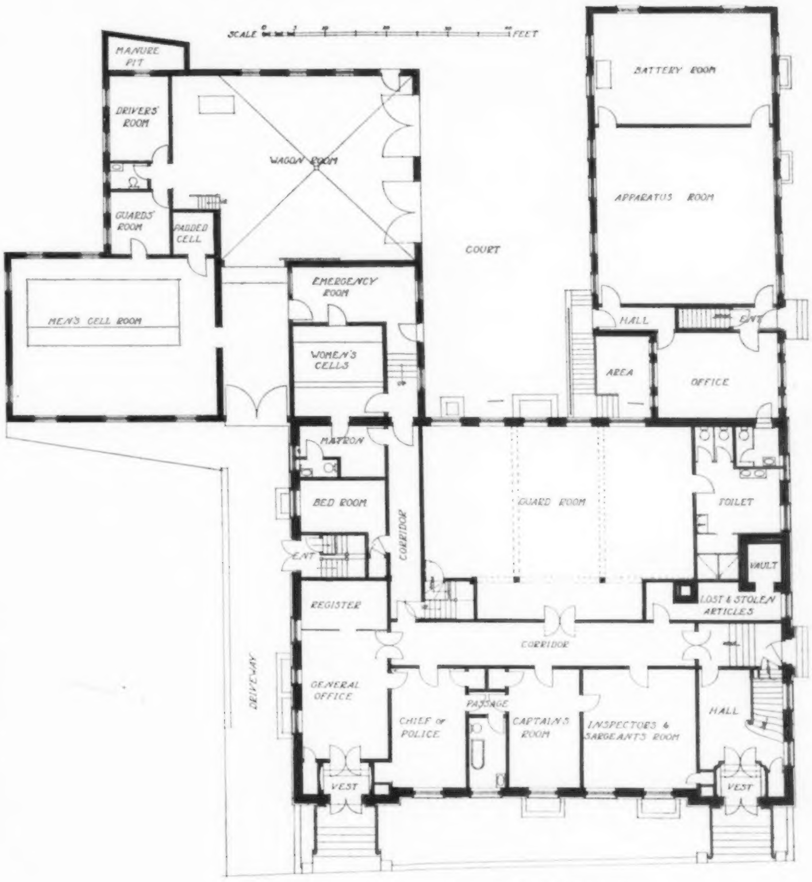
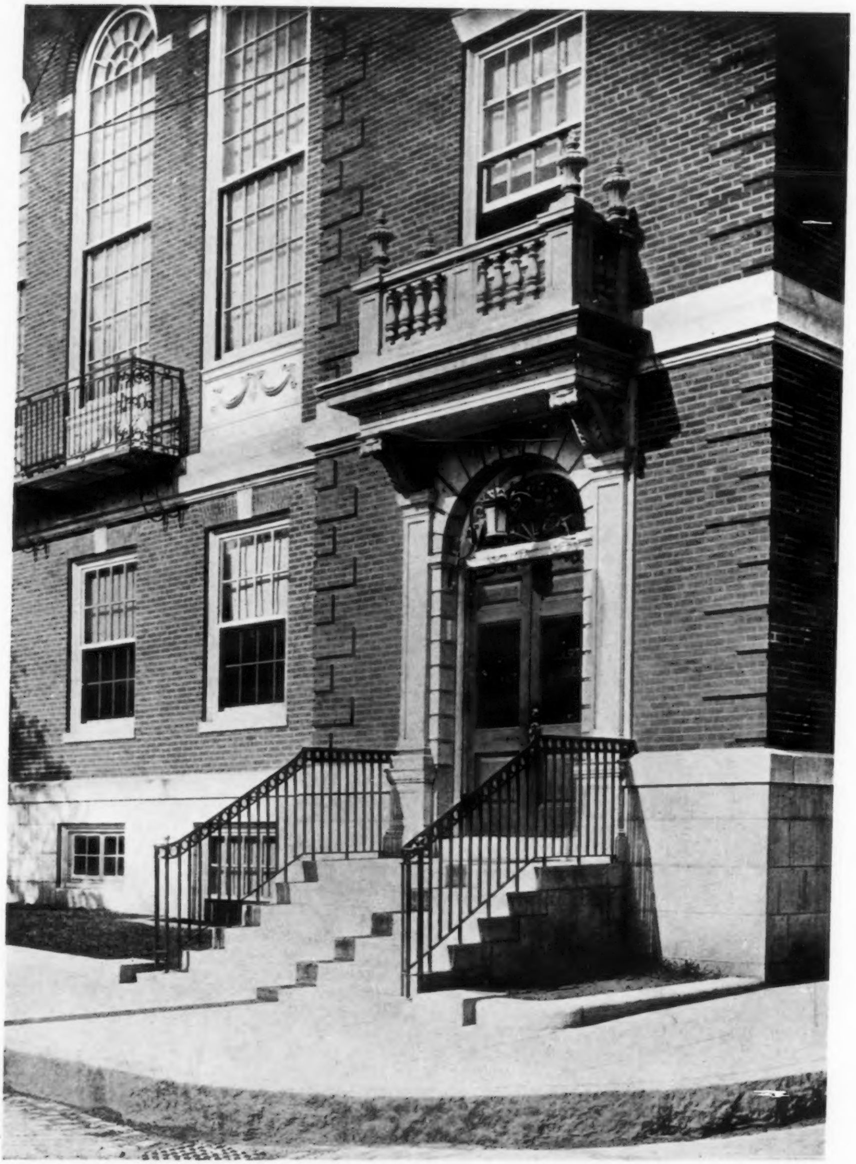


FIRST FLOOR PLAN

POLICE HEADQUARTERS, DISTRICT COURT, AND ELECTRICAL STATION, SALEM, MASS.
IOHN MATTHEW GRAY, ARCHITECT

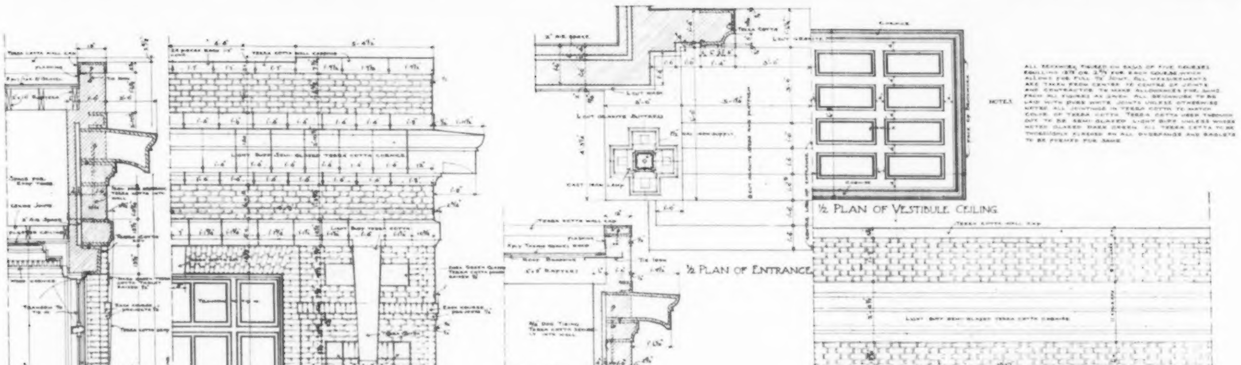


DETAIL OF ENTRANCES

DETAIL OF PRINCIPAL FACADE

POLICE HEADQUARTERS, DISTRICT COURT, AND ELECTRICAL STATION, SALEM, MASS.

JOHN MATTHEW GRAY, ARCHITECT

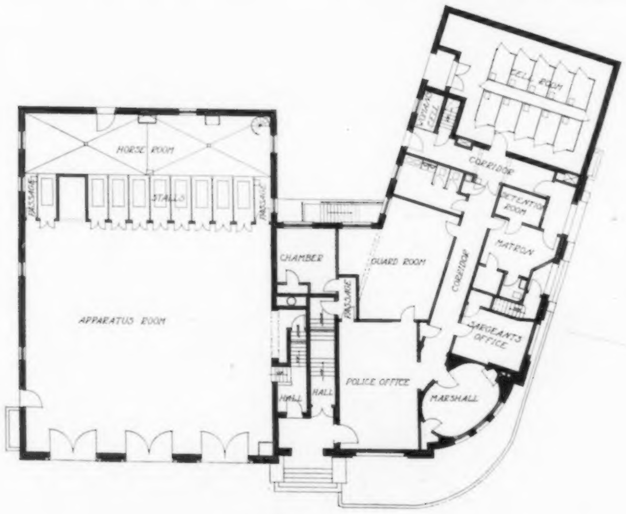


POLICE HEADQUARTERS, DISTRICT COURT AND FIRE STATION, MARLBOROUGH, MASS.

BIGELOW & DYER, ARCHITECTS

EDWARD PERCY DANA, CONSULTING ARCHITECT

DETAIL OF ENTRANCE AND CORNER



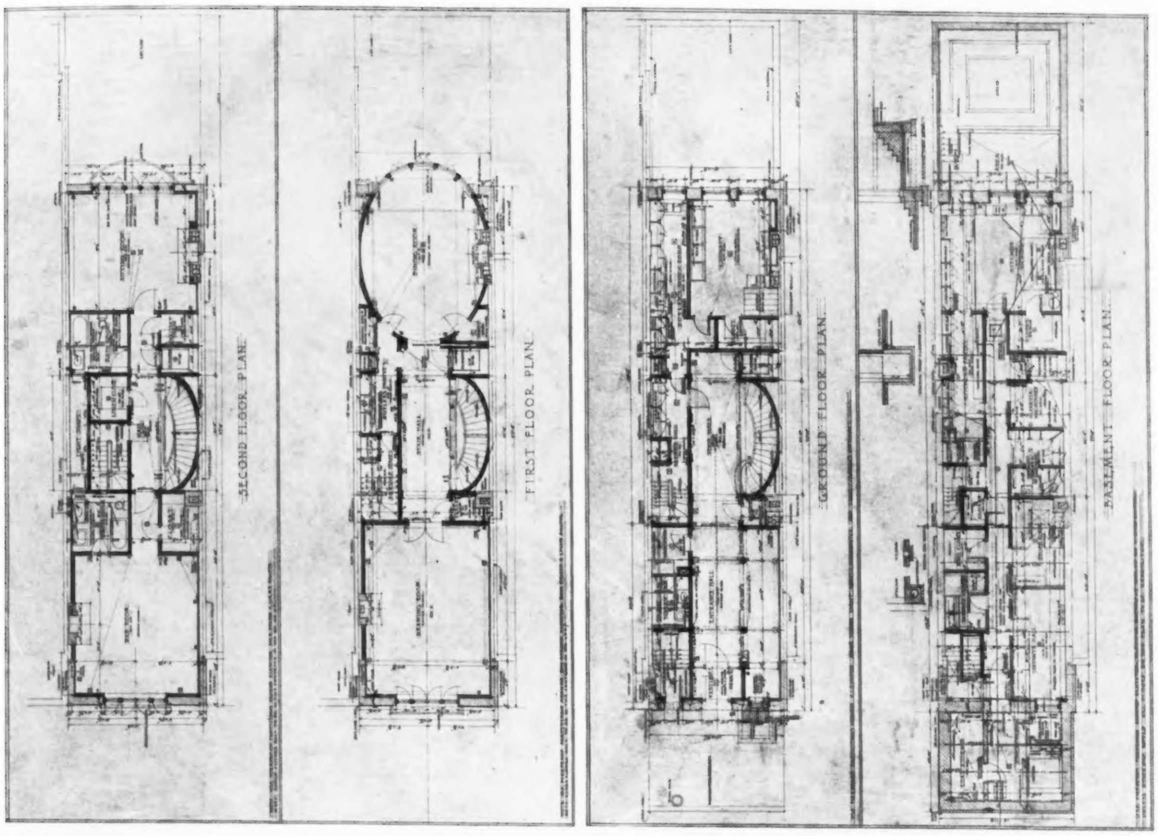
FIRST FLOOR PLAN.

SECOND FLOOR PLAN

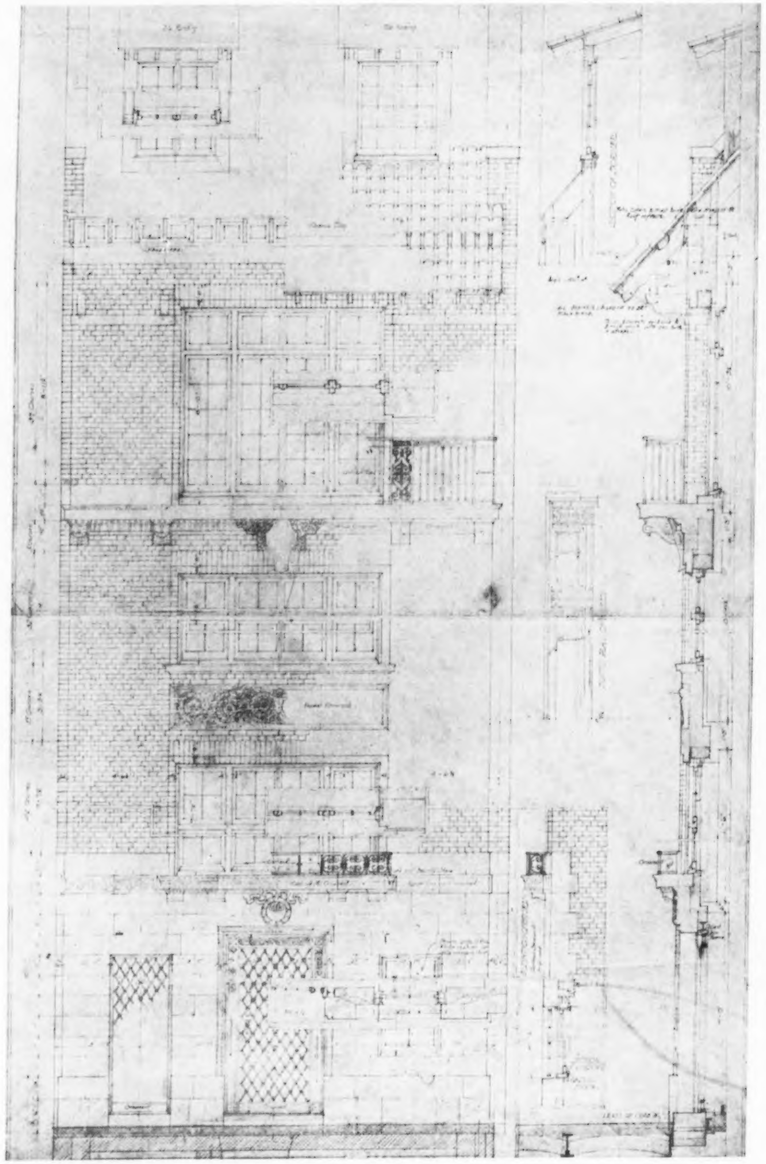
POLICE HEADQUARTERS, DISTRICT COURT, AND FIRE STATION, MARLBOROUGH, MASS

BIGELOW & DYER, ARCHITECTS

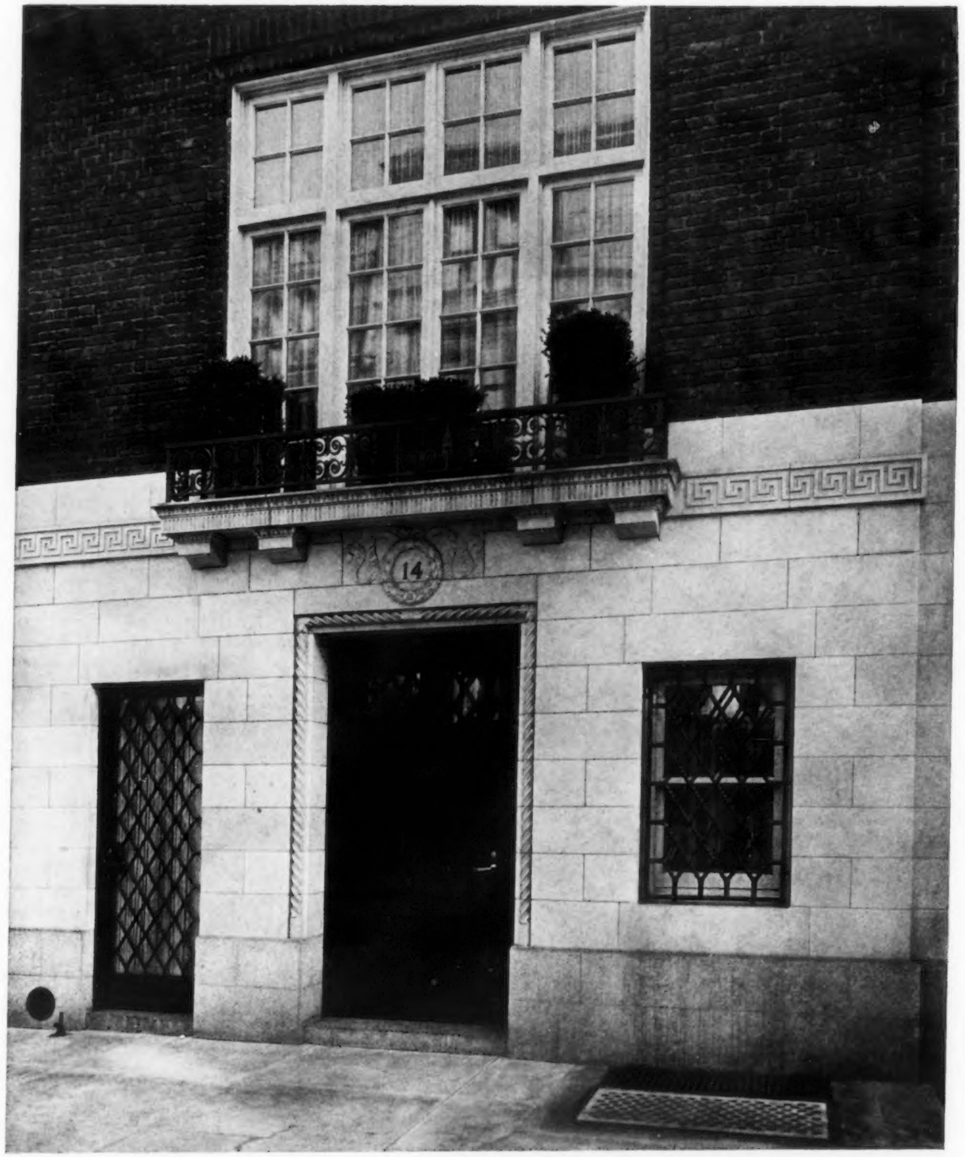
EDWARD PERCY DANA, CONSULTING ARCHITECT



HOUSE AT 14 EAST 76TH STREET, NEW YORK, N. Y.
YORK & SAWYER, ARCHITECTS



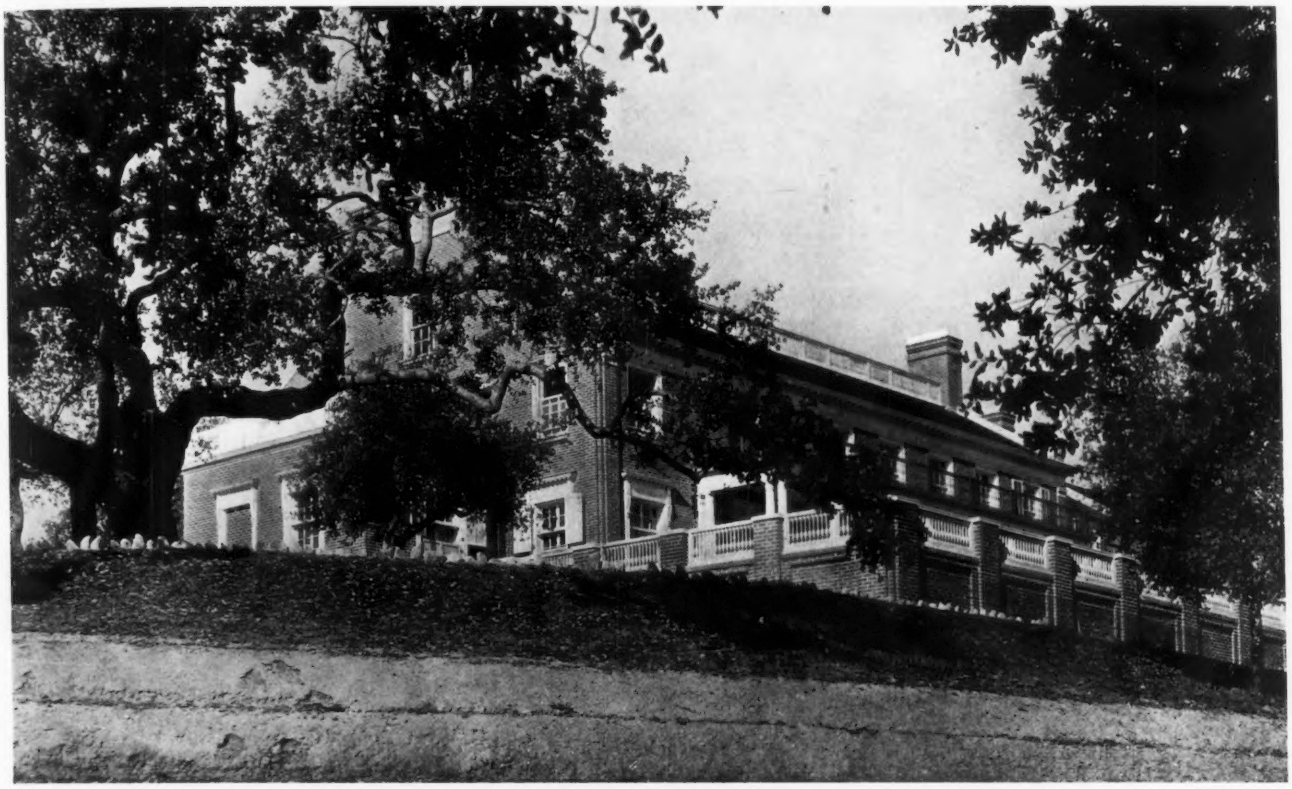
DETAIL OF ELEVATION



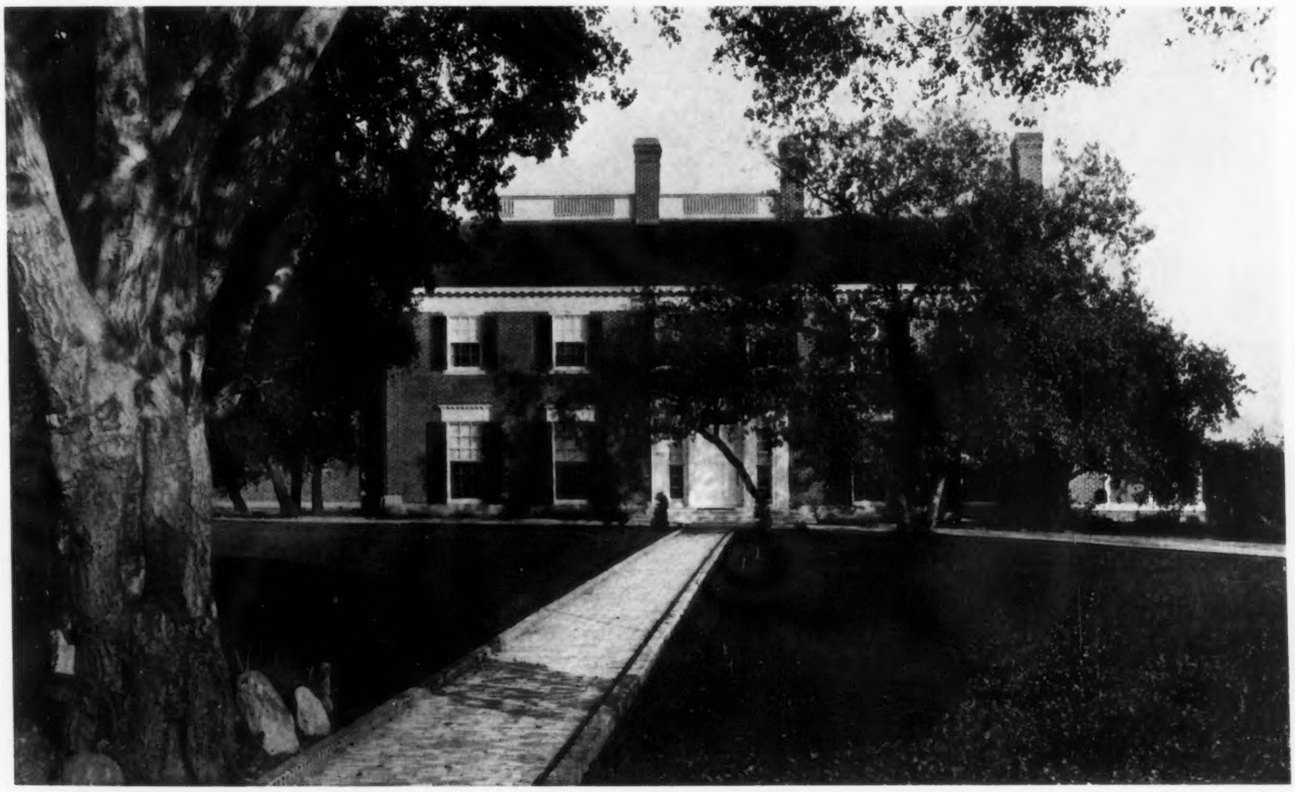
DETAIL OF ENTRANCE

HOUSE AT 14 EAST 76TH STREET, NEW YORK, N. Y.

YORK & SAWYER, ARCHITECTS



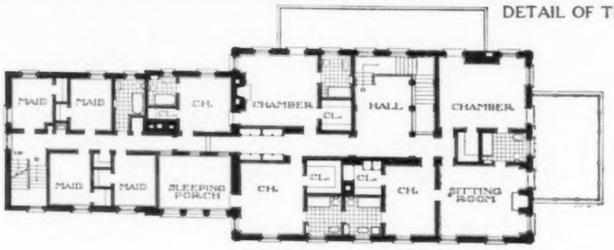
VIEW FROM BELOW TERRACE



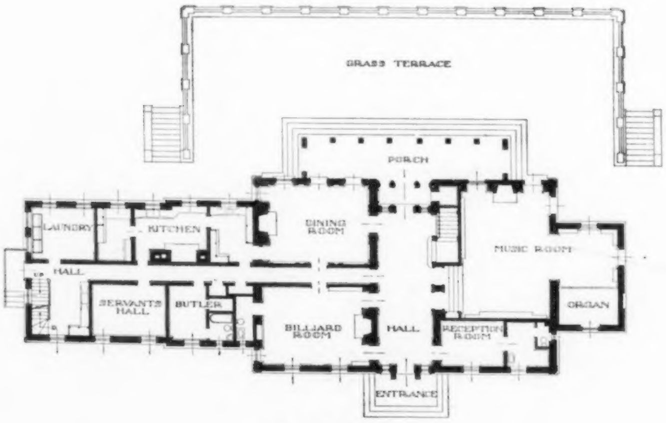
VIEW FROM APPROACH

HOUSE OF E. F. ROBBINS, ESQ., PASADENA, CAL.
MYRON HUNT, ARCHITECT

DETAIL OF TERRACE FRONT



SECOND FLOOR PLAN



FIRST FLOOR PLAN

DETAIL OF FRONT ELEVATION

HOUSE OF E. F. ROBBINS, ESQ., PASADENA, CAL.

MYRON HUNT, ARCHITECT

MUSIC ROOM

ENTRANCE HALL

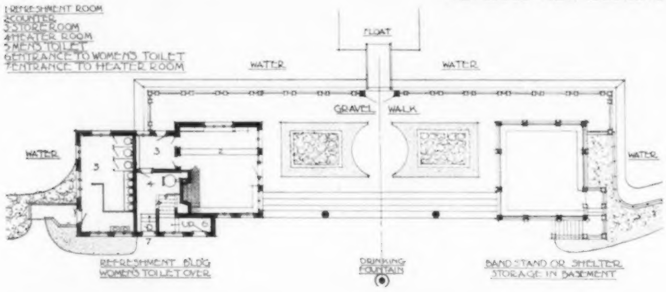
HOUSE OF E. F. ROBBINS, ESQ., PASADENA, CAL.

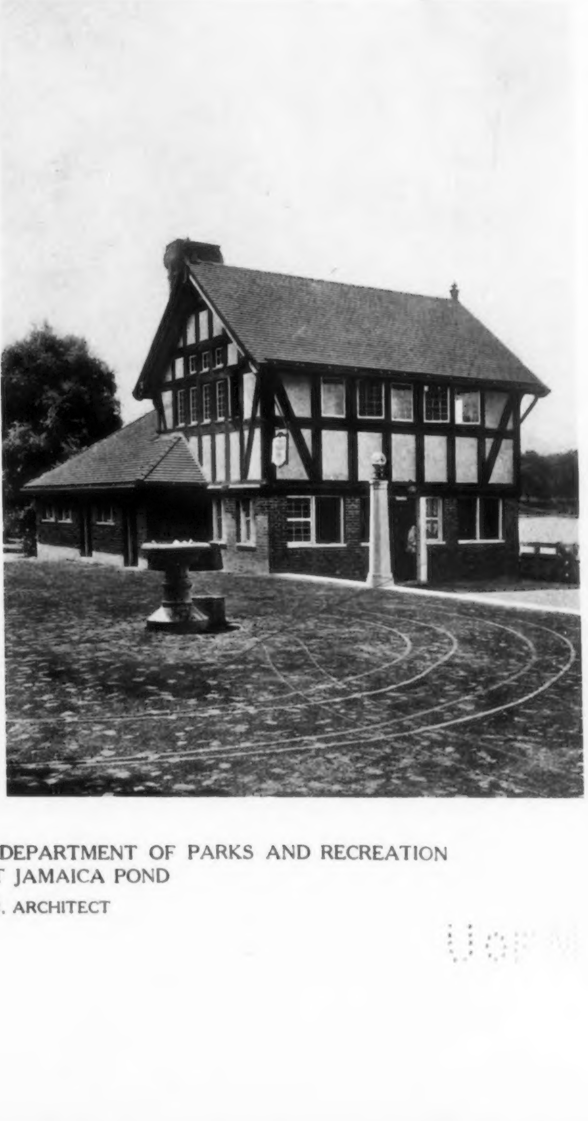
MYRON HUNT, ARCHITECT

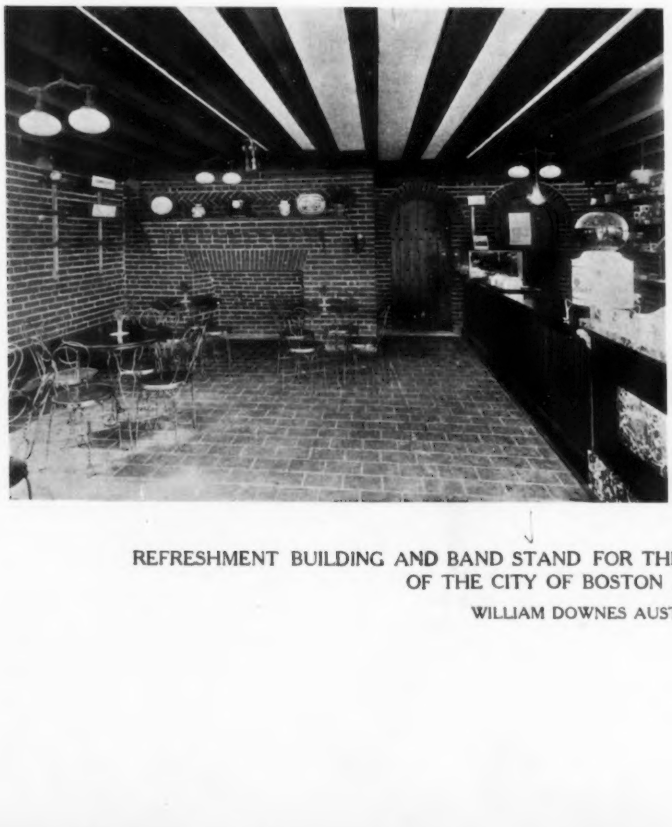
HOUSE AT PITTSBURGH, PA.

THOMAS PRINGLE, ARCHITECT AND OWNER

GENERAL VIEW LOOKING TOWARD WATER







REFRESHMENT BUILDING AND BAND STAND FOR THE DEPARTMENT OF PARKS AND RECREATION OF THE CITY OF BOSTON AT JAMAICA POND

WILLIAM DOWNES AUSTIN, ARCHITECT

Bathing Pools Within and Out of Doors.

By WILFRED CAREW.

THE attraction of the out of town home is its being in the country. One of the very definite tendencies in present day living is toward a wider and more practical use of country life and the enthusiastic enjoyment of the pursuits and diversions which it makes possible. This full acceptance of out of door living makes for everything which could heighten the attractiveness of the country home, and architects began years ago to add to the out of town estate every possible adjunct for enjoyment and recreation for which the open country affords space and abundance of opportunity.

Bathing pools have for many years been more or less well known in athletic clubs or associations, occasionally in hotels and frequently upon ocean vessels, the equipment of which often includes almost everything imaginable to make the passing of days at sea as attractive as possible. Perhaps it is the making the acquaintance of the bathing pool in some such more or less public place which has brought about its presence upon many country estates, where it appears within as well as out of doors and in the simplest of forms as well as under the most magnificent of guises.

The bathing pool can hardly be considered anything new. Like many of the details of a modern home it is merely a revival or, perhaps, an adaptation, of an idea exceedingly old. During the days of ancient Greece and Rome the despots and the Cæsars instituted the most sumptuous of baths maintained by the state for the benefit of the people, and within the villas and palaces of the wealthy classes the bathing pool — *impluvium* — was a recognized necessity. An adjunct which could so readily be made to assume an appearance highly architectural could hardly escape the attention of the clever designers of the old Roman and Pompeian villas which are beautiful to-day even in the sadly defaced ruins which yet exist. Very often such a bathing pool would be set within a court of its own about which there extended a broad ambulatory walled and paved with marble or mosaic, and with a row of columns set about the edge of the basin to support the roof of the ambulatory, the space directly over the pool itself being left open to the sky. These cool and spacious courts and corridors formed most inviting retreats from the heat and glare of an Italian summer and, adorned with the fountains, the lamps, and the bronze or marble furniture which the splendid craftsmanship of the day produced, and used as the setting of the gorgeously picturesque life of the period, they must have been beautiful indeed. There, surrounded by these magnificent accessories, the ceremony of bathing assumed a pomp and circumstance — a certain ritual which lent additional splendor to what is now considered one of the most commonplace and prosaic details of the day's routine.

The ancients with the splendor of their bathing arrangements would have looked with complete disdain upon our modern facilities much as we ourselves, proud in the possession of our bath tubs of porcelain, are pleased to regard the tubs of tin or zinc which some of us remember were considered luxuries in the homes of a generation ago. But like so many details of ancient life this splendid picture possessed a reverse — another aspect — which was much less attractive, for these beautiful pools were often lined with marble or with mosaic made of various kinds of marble, both being highly absorbent and becoming in time more or less filled or saturated with impurities absorbed from the water and the air even when the accumulation of such impurities was removed from the surface of the marble or mosaic. Then, too, the method of caring for the pool rendered inevitable the formation of more or less mud or slime at the bottom, and which was of course impossible to remove without emptying the pool of water.

Men who have been trained in designing and in the selection of materials best suited to the work in hand may be interested in the several phases of the development of the modern bathing pool. The earliest of the modern examples were little else than large square or oblong holes in the ground, floored and walled with brick plastered over with cement or, in some later developments, both floor and walls were of concrete. A pool built by either method left much to be desired upon several grounds. Where the pools were out of doors, as was very

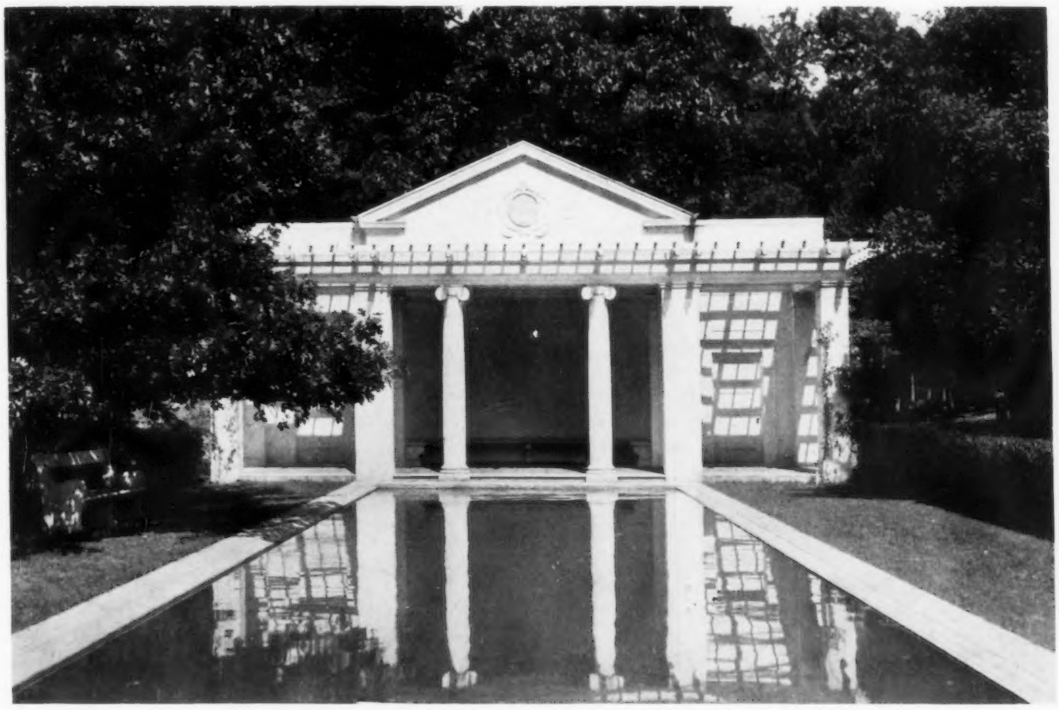
Bathing Pool on the Estate of Mr. Mortimer F. Swift, Oyster Bay, Long Island
C. P. H. Gilbert, Architect

Bathing Pool on the Estate of Mr. H. R. Rea, Pittsburgh, Pa.
MacClure & Spahr, Architects

often the case with those first built, the walls of brick and cement or of concrete showed a decided tendency to crack, particularly under the influence of the low temperature of winter, and the freezing of such water as might enter, even though the pools were carefully drained. The making of repairs to a pool thus injured was both difficult and costly, and unless such repairs were very carefully made the water might gradually escape through a crack imperfectly mended. There were also serious objections to pools so constructed upon the score of cleanliness, for both cement and concrete are more or less absorbent and will take in impurities from both water and atmosphere. Any one familiar with pools of these earlier days will recollect the lines of grease just above the water line, —a kind of scum which unless continually removed increased in thickness to become in time a menace to health. Then, too, such pools could not be thoroughly cleansed unless emptied, with considerable waste of water, and unless the pools were frequently thus cleansed the water became so murky with sediment that its use for bathing was anything but a pleasure. The bathing pools of that era were hardly an improvement upon those of ancient days, being built and operated upon almost exactly similar principles. It is singular to have to record that since the days of antiquity until quite recently there has been very little improvement in the building of such pools, but such is the case.

The construction of plunge baths or bathing pools to-day has attained a high degree of mechanical and artistic excellence. Such pools are often built upon the grounds of country estates and being entirely open are naturally intended for use only during the months of summer; quite

Bathing Pool within a Sunken Garden
Charles W. Leavitt, Jr., Landscape Architect



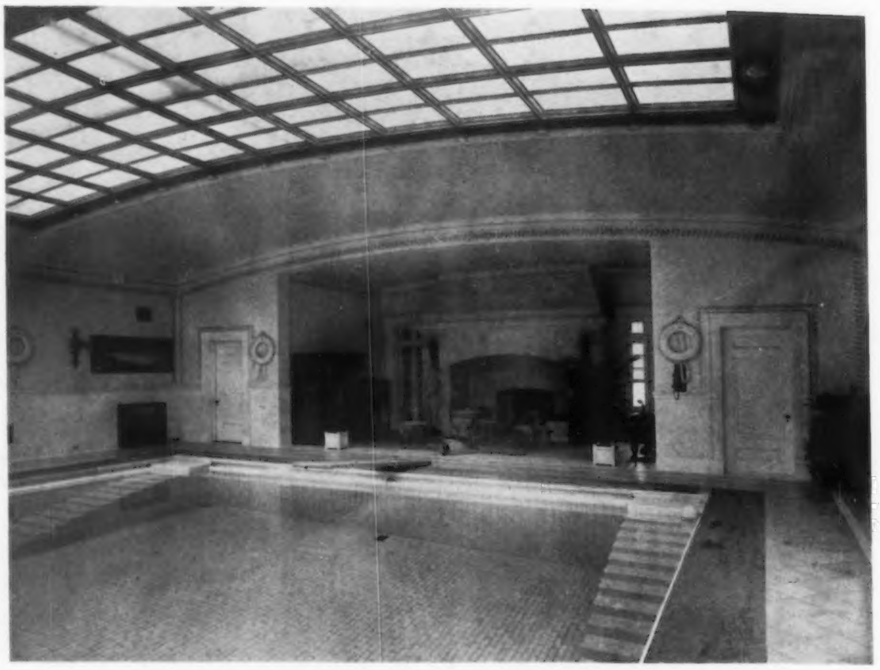
OPEN AIR BATHING POOL AT "WOODSTON," MT. KISCO, N. Y.

CHARLES A. PLATT, ARCHITECT

BATHING POOL IN A BUILDING DEVOTED TO ATHLETICS AT "FERNCLIFFE," RHINEBECK, N. Y.

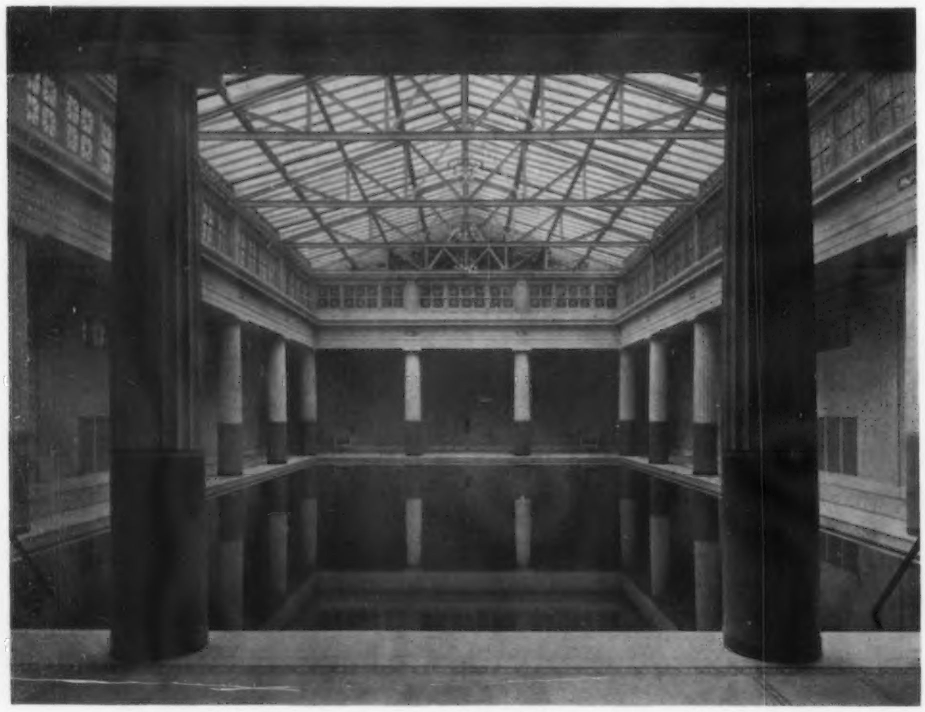
McKIM, MEAD & WHITE, ARCHITECTS

as often, however, they are built within permanent and solid structures and being provided with every device which could make them attractive during the winter as well as the summer, they may be equally useful at any season.



Bathing Pool at "Ft. Tyron Hall," the Estate of Mr. C. K. G. Billings, New York
Guy Lowell, Architect

The most approved method of bathing pool construction, used for pools in the open air as well as for those within doors, calls for the building, within the excavation, of a concrete bed foundation and retaining wall which is frequently reinforced to withstand the outer water pressure. The walls and floor thus laid are then covered with several alternating layers of tar and tar paper, or occasionally of tar and heavy burlap, and upon this foundation is built a thin wall of one course of ordinary brick. The inner lining of the pool is apt to be of some such highly non-absorbent material as enameled brick or ceramic mosaic laid in cement which has been thoroughly waterproofed. Of whatever material the pool be lined the cove base used in the angle where floor and walls unite, and also the portions of the lining where the walls unite with the surrounding floor, are apt to be of terra cotta modeled and enameled or else covered with ceramic mosaic like the facing of the lining of the pool. The high excellence of the pools now being built is due very largely to the ingenious method by which the water within the pool is freed from such impurities as must necessarily find their way into it. About the edges of the pool, and at precisely the water line, there extends a narrow outlet gutter generally of enameled terra cotta and which is so inclined that the water which flows into it is at once carried away through drains. The water which is being continually forced into the pool is first filtered, then frequently heated and sterilized, and the continued inflow causes an equally continued overflow into the outlet gutter. By this method any particle of dust or any animal or vegetable germ which falls into the water at once rises to the surface and is removed by the continued movement of the surface water toward the drains.



Bathing Pool of Mrs. Finley J. Shepard, Irvington, N. Y., Suggesting the "Impluvium" of a Pompeian Villa
Crow, Lewis & Wickenhoefer, Architects

The floor about the pool frequently ends in a cap course of terra cotta enameled, sloping very slightly toward the pool. Water used for the cleansing of such floors thus flows toward, but not into, the pool but rather into the gutter, capillary attraction assisting. Quite as often,

Reception Room in Building Containing the Bathing Pool on the Estate of Mrs. Finley Shepard, Irvington, N. Y.
Crow, Lewis & Wickenhoefer, Architects

however, such floors may slope very gently away from the pool toward a valley provided with drainage valves of its own. The edge of the gutter performs a highly necessary and useful service as a life guard, placed as it is where a life guard should be, at the water's edge rather than some distance above the water where it cannot always be readily grasped by a bather who may be in need of it. This provision for a life rail renders unnecessary the use of unsightly and unsanitary ropes or the metal rails which project above the water and which may easily be the cause of accident to a bather beneath them in the water.

It may be hardly necessary to dwell upon the architectural dignity with which a bathing pool may be clothed. Where the pool is placed out-of-doors it may be, and frequently is, made a part of a stately and formal setting of the garden. It may occupy a sunken space below terraces and be approached by flights of steps to increase the formal effect, or it may be placed between rows of tall poplars which will be reflected in the water. In any event the usual shelter, including dressing rooms and lavatories is often so designed as to heighten the stately effect.

When the pool is intended for use during the entire year and is placed within a permanent structure, the opportunities for its decorative treatment are fully as great. It may be surrounded by very complete reception and dressing rooms, retiring rooms, and apartments containing shower baths, and at the end of one bathing pool which is illustrated herewith there is a great fireplace. A most brilliant effect can be secured by the use of ceramic mosaic in color for the lining of a pool, for with the highly developed mechanism for supplying, purifying and renewing, the water should be of a crystal clearness beneath which the mosaic may easily be seen. The surroundings of a bathing pool, like a greenhouse, must be maintained at a high temperature and in planning them together great economy of operating may be secured.

Exterior of Building Containing the Bathing Pool on the Estate of Mrs. Finley J. Shepard, Irvington, N. Y.
Crow, Lewis & Wickenhoefer, Architects

DETAIL OF NO. 11 EAST PLEASANT STREET, BALTIMORE, MD.
MEASURED DRAWING BY RIGGIN BUCKLER

√

Colonial Doorways of Baltimore, Md.

By RIGGIN BUCKLER

Doorway at 9 East Pleasant Street

THE greatest charm of the Colonial house is in its doorway. Especially in the city where the houses are built adjoining one another and the opportunities for any elaborate details are few, the doorway is the touch that relieves the plain façade and gives to the whole the individuality and charm that is so much sought after to-day in modern work. The doorway also expresses the interior to a certain extent. In the old work the double doors with columns and side lights nearly always opened directly into a spacious hall, for there were no vestibules, and the elliptical arch over the entrance was generally repeated in an interior arch supported by either columns or pilasters.

The requirements of the modern home are so very different from those of a hundred years ago that it is only in the use of detail that the spirit of the Colonial work may be caught. Modern adaptations of old doorways often fail because of the absence of this spirit. Many architects carefully follow old details in their drawings to have their work go for naught in the poor execution of some dependent and related feature, as the leaded glass ornaments, for instance. The ornaments of the old head and side lights were beautifully designed and executed. Unfortunately, the same cannot be said of the modern. Some architects nowadays remove the ornaments from the old lights and either use them intact on their own work or have castings made from them.

The old doorways in Baltimore, as in every other large city, have suffered greatly from the hand of time and man. It is almost impossible to find any in their original condition; sometimes it is the headlight that is missing; more frequently the side lights and occasionally the fine old paneled doors have been replaced by a single door with a large plate glass light, and in almost every case the delicate mouldings are obliterated with numerous coats of green or black paint.

The doorways selected for illustration in this article show the great variety that Baltimore possesses. Even those of the small two-story houses have great charm, although they have little detail to boast of. The Whyte house, 207 North Calvert street, is situated just off Battle Monument Square and, with its beautiful fan light and delicately moulded elliptical columns, is one of the best in the city. A curious feature is the slot behind the side lights for shutters to be put up in case of any disturbance.

Several of the doorways illustrated are on Pleasant street. This street leads directly off Charles street, in the center of the shopping district, but due to the steep grade which makes it impracticable for business purposes the old houses have thus far escaped demolition. There are other houses in this block than those illustrated which are of almost equal merit, and the whole group, with its cobbled street, is a glimpse of the Baltimore of the past.

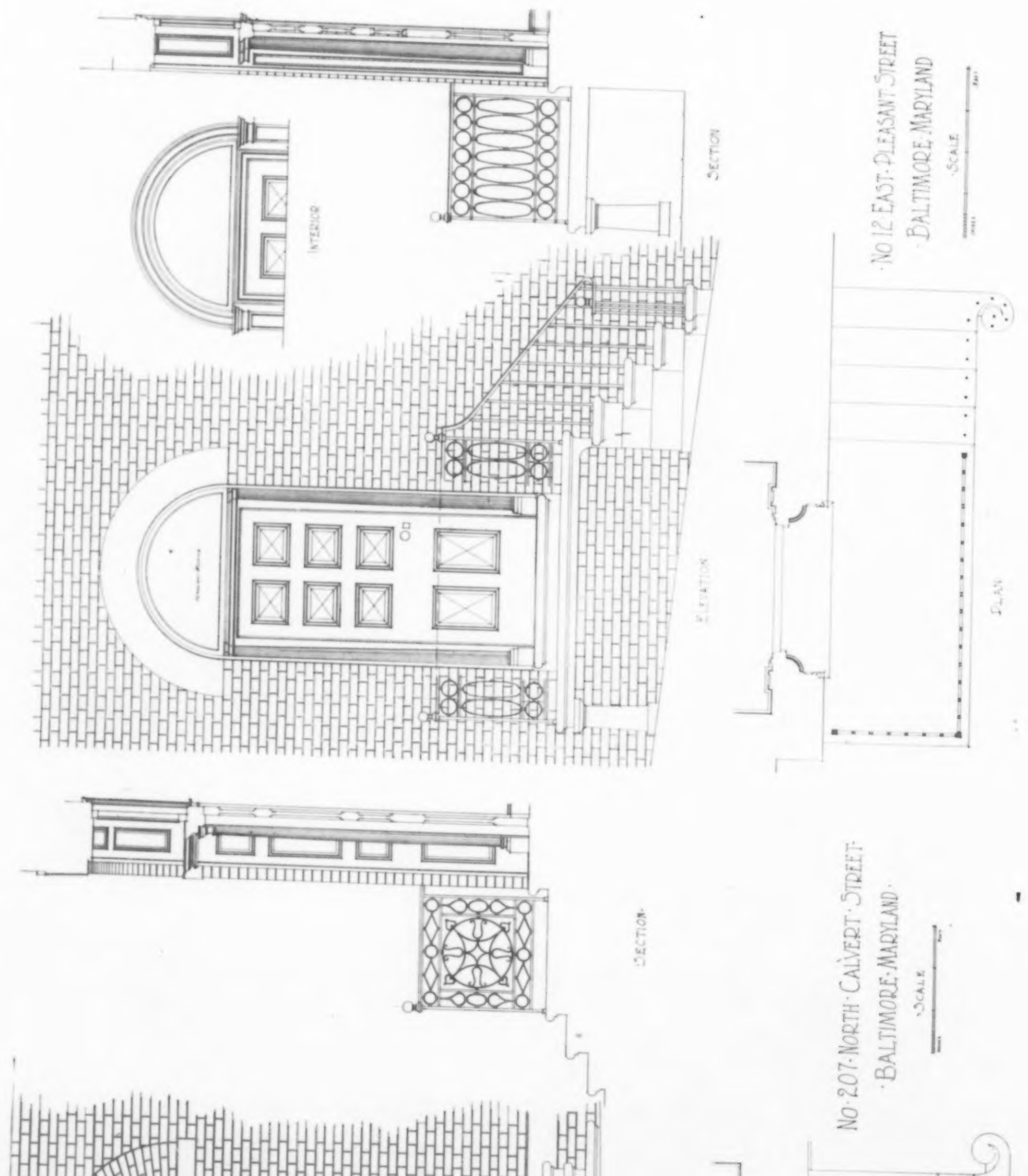
Number Eleven, with its broad steps reaching out hospitably, is an excellent example of the double doorway with the elliptical arch treatment. The house is now used as an office building, a number of architects, the author being one, having their offices in it, and for this reason the building will probably be preserved until the growing demands of business outweigh the sentiment attached to these early houses.

209 St. Paul Street

417 North Charles Street

539 Columbia Avenue

COLONIAL DOORWAYS IN BALTIMORE, MD.



DETAILS OF COLONIAL DOORWAYS AT BALTIMORE, MD.
MEASURED DRAWINGS BY RIGGIN BUCKLER

Monographs on Architectural Renderers.

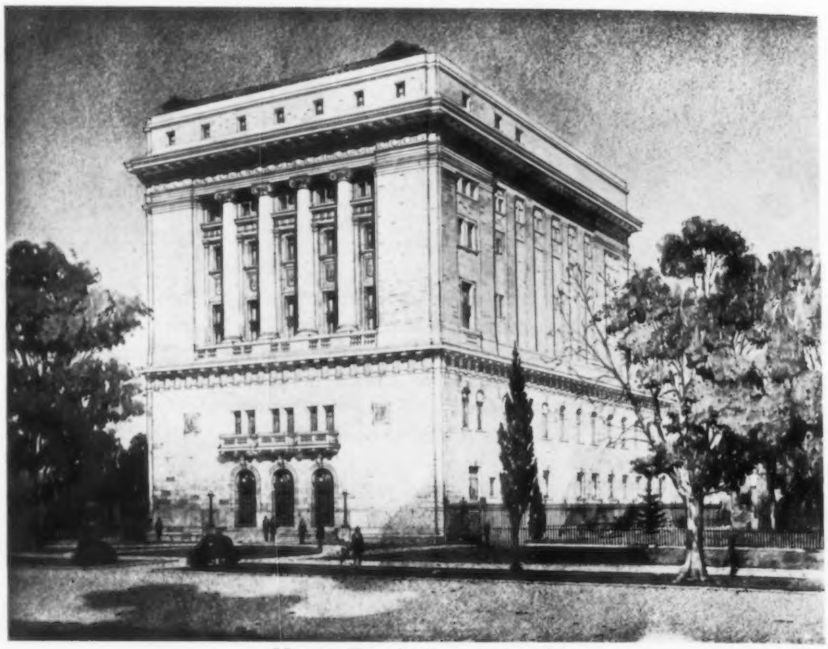
BEING A SERIES OF ARTICLES ON THE ARCHITECTURAL RENDERERS OF TO-DAY, ACCOMPANIED BY CHARACTERISTIC EXAMPLES OF THEIR WORK.

VI. THE WORK OF FLOYD YEWELL.

THE youngest of the men who have achieved any prominence as architectural renderers is Mr. Floyd Yewell, who has made himself known through his excellent colored drawings exhibited at the architectural exhibitions during the last two years. To become known in such a manner is in itself a mark of considerable distinction, because the constant raising of the standards of rendering of the drawings shown at the architectural exhibitions has made these exhibitions almost as much painting shows as architectural ones. There has been, in fact, within the last year or two, a reaction in the architects' offices in favor of drawings which can be made by draftsmen and not painters, many architects feeling that the expense of the wonderful colored drawings is an added burden which would be unnecessary if it were not customary. In other words, if all architects submitted the same sort of sketches to their clients, no man would feel that he had lost work because of the superior presentation of an inferior scheme by some one else, and many men have said of late that clients are being educated to expect far too much in this way from their architects. Without regard to the propriety of limiting the pictorial effect of architectural drawings, one can only say that the client with the untrained eye obtains a much better idea of what his building is going to look like, from a colored drawing, than he can in any other way, although the black and white drawings required in THE BRICKBVILDER competitions are by no means a bad method of showing work, and judging from the great number of excellent drawings received in these competitions are not so difficult of execution but that most offices can find men who can make them.

Country House at Great Neck, Long Island
Aymar Embury II, Architect
Floyd Yewell, Delineator

Mr. Yewell is a Baltimorean who took a course in the Maryland Institute of Art and afterwards went into the office of Messrs. Wyatt and Nölting of Baltimore, where he stayed for several years, at the same time working in the Baltimore Beaux Arts atelier. Two years ago he came to New York and since then has worked in the offices of Messrs. Guilbert and Betelle, and Mr. Aymar Embury II, but latterly has not been connected with any particular firm, doing independent rendering as Mr. Birch Burdette Long has done for so many years, and he has lately been working with Mr. Long. Like all young men in almost every profession, he has not yet fully developed a technique of his own: we see in his work reminiscences of the manners and methods of the best of our architectural renderers, and he is gradually working away from the imitative stage of his art and growing in sureness, individuality, and strength. Even before he came to notice as an architectural renderer, some of his very delightful *esquisse-esquisses* rendered in the various Beaux Arts competitions attracted notice, and several of them were selected by the school committee of the Beaux Arts Society for inclusion in the Annual Exhibition of the Architectural League of New York, to which the Beaux Arts Society send annually a handful of its best drawings. These were in most cases not so much water color renderings as black and white drawings, either in pencil or in ink, with a few flat washes — a way of working which will be readily recognized by any one who has tried to do architectural rendering as a quick and effective method of making sketches if (and only if) the draftsman has a sound knowledge of his architecture and a sureness of draftsmanship. Both these qualities Mr. Yewell has, and even in those of his drawings, which are distinctly water colors as distinguished from colored black and white drawings, he exhibits this same characteristic grasp upon the architectural skeleton underlying the colored picture. He does not, however, render as do so many architects, with invariable attention to the "diagonal of a cube," shadow lines; but his drawings rather suggest paintings, in that he has realized that the time of day affects the angle of light as well as the coloring, and if we find in any of his drawings that the shadows are caused by a midday sun, we need not study the shadow angles to see why, for the color and tone of the drawings express it by themselves.



H. P. Knowles, Architect

Masonic Temple, Toronto, Canada

Floyd Yewell, Delineator

The five drawings which illustrate this article display very well the various stages of development through which Mr. Yewell has passed up to the present time, and it should be remembered in examining even the latest of his drawings that these are representative of the stage of development and not of a final and definite conclusion. Any sort of art work which is made by a man in process of evolution is apt to have something fascinating about it, and though it may not show the power and ability that the same artist exhibits in the matured work, and it may not have the same mastery of technique or the same complete knowledge of the subject, and though none of the early work of a great artist would probably be included in the list of his master pieces; all works of art executed during the formative period of an artist's career have a quality which is lost in his later work; his matured expressions are apt to become repetitions of previous experience, based on a result of previous experiment, and while they may be fine and sure and of exquisite taste and vigor, they do not have the delicacy and spontaneity and the instinctive response to a man's own need for artistic expression that his earlier work has. And though they may be less imitative of other men's work, there is after all something very charming in the eager response of a receptive, sensitive temperament to the appeal of fine things. So with Mr. Yewell, we must not look upon his work as being exactly the sort which will finally be known as the "Yewell" way of rendering. It is less a product of his previous experience than a tentative (but not stumbling) search for his exact *metier*.

The nearest in type to his atelier work is the rendering of a house at New Canaan, designed by Mr. Alfred Busselle. It is a pencil drawing, both delicate and lovely, the shadows hinted at not insisted upon, the surfaces distinguished as much by the penciled texture of the walls as by their colors, and the relations of the various planes of the building to the direction of

Bird's-eye View of Apartment House, Newark, N. J.

Guilbert & Betelle, Architects

Floyd Yewell, Delineator

light are made known by faint luminosities rather than by brilliant high lights. It is a drawing of quiet but undoubted charm, and executed with almost complete freedom from the influence of other men.

Mr. Robert Louis Stevenson says, in one of his essays, that the artist must learn to do two things — to omit the irrelevant and unnecessary, and to suppress the relevant and tedious — and the excellence of this particular drawing is due as much to the omission of unnecessary and to the suppression of necessary entourage as it is to emphasis on the building itself.

The perspective of the Newark apartment house, designed by Messrs. Guilbert and Betelle, is of another type, and while it does not in method at all resemble the work of Mr. Hughson Hawley, it has both the good points and the defects of his work. One feels that too much has been made of the foreground, and that the building suffers because of this emphasis, although close observation shows that the building has been rendered carefully and well. The background has been well treated, both in giving the impression of distance and in the manner of its subordination; but the over careful rendering of the schoolhouse in the foreground with its gardening, etc., makes us wonder which is the thing the drawing is intended to show. It is probable that there is a very good reason back of this, since the apartment house is evidently designed to harmonize with the schoolhouse opposite, and so that the parking and landscape work would count together, in spite of the cross street between the two gardens.

In the renderings of the bank building (see frontispiece) for Mr. Warrington G. Lawrence and the Masonic Temple in Toronto, designed by Mr. H. P. Knowles, Mr. Yewell has frankly made use of some of the tricks and mannerisms of Mr. Eggers, especially in the employment of the air brush on the foreground and the sky, and there might have been cause for complaint had Mr. Yewell handled this implement in a slovenly or unintelligent manner; but the success of any borrowing of this kind is the measure by which it may be justified, and while Mr. Yewell has not carried this sort of rendering nearly as far as has Mr. Eggers, his results are hardly less admirable. Especially in the rendering of the Masonic Temple we find that he has been able to successfully combine blown surfaces with ordinary brush work in a manner interesting and harmonious, securing admirable impressions of distance to the right and left of the façade, as well as a vibrant quality in the whole drawing. The air brush is, of course, no new invention: they say it has been used for centuries in the Beaux Arts, but it is due to the tremendous success with which Mr. Eggers employed it that it has of late come so into favor.

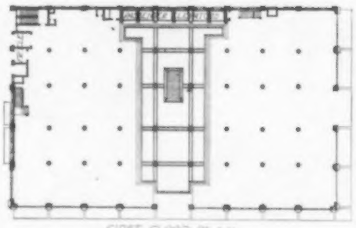
The fifth of the drawings illustrated, a small country house, is also suggestive to some extent of Mr. Eggers, but the faintly shadowed trees in the foreground are evidently reminiscent of Mr. Guerin's work.

While it cannot honestly be said that Mr. Yewell's work is as yet on a plane with that of Mr. Johnson or Mr. Eggers, it must be remembered that these men are nearly twenty years older than Mr. Yewell, and their maturity is indicated by a vigor and power quite distinct from the delicacy and freshness of youthful work. Of all our American renderers, we can look to him with the surest confidence in his continuing development, because he is still in the formative stage of his career, and is displaying an ability in both draftsmanship and color which was not surpassed by the other men at so early a stage.

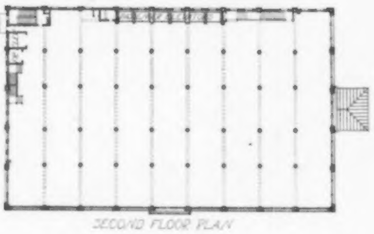
Alfred Buselle, Architect

Country House at New Canaan, Conn.

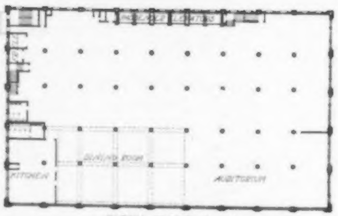
Floyd Yewell, Delineator



FIRST FLOOR PLAN



SECOND FLOOR PLAN

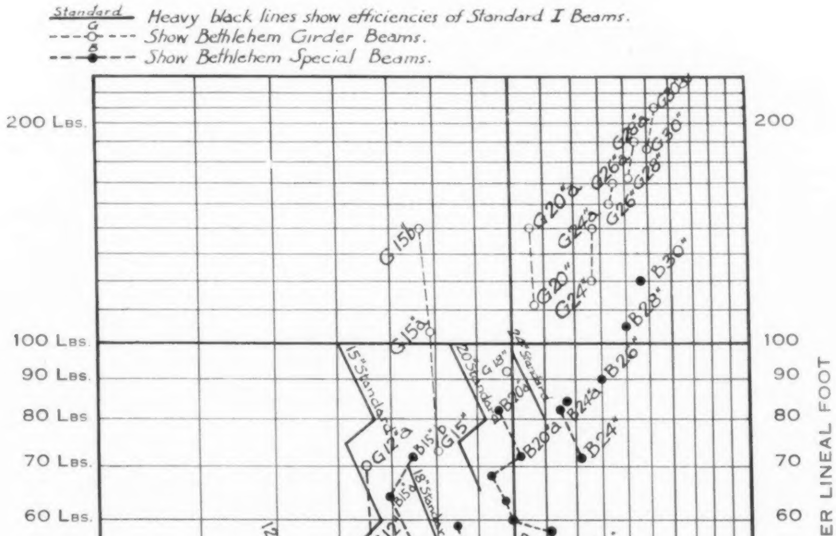


FIFTH FLOOR PLAN

DEPARTMENT STORE BUILDING, INDIANAPOLIS, IND.
VONNEGUT & BOHN, ARCHITECTS

A Comparison of the Structural Efficiency of I-Beams.

By FRANK H. CARTER, Assoc. Mem. Am. Soc., C.E.



IN making a study of the per pound efficiency of various types and weights of I-beams, the writer plotted the results of his computations on a logarithmic scale diagram after the manner of one drawn by William Fry Scott and published in his book entitled "Structural Designer's Handbook."

A 24-inch standard 100-lb. I-beam was taken as the standard of efficiency (100%) and all others, both standard shapes and Bethlehem shapes, referred to the 24-inch standard 100-lb. I-beam. The lighter weights of each depth are found most efficient per pound of metal. The Bethlehem shapes, particularly the girder shapes, are markedly more efficient per pound of metal than the standard types. In the 30-inch 175- and 200-lb. Bethlehem girder type, a gain of 50% in efficiency is shown over the 24-inch standard 100-lb. shape.

EDITORIAL COMMENT AND NOTES FOR THE MONTH

IT IS sometimes valuable to turn to the past and to note that our problems are no less the problems of twenty centuries ago. Vitruvius, in writing of the position of architects of his day, tells us that, "The other architects go round canvassing. I was always taught rather to be sought after than to seek for work. What are we to think of the architect who advertises save that he hopes to profit himself at your expense? And so before our day it was the custom to employ architects of social standing and secondarily to consider their education. They would rather trust a gentleman's honor than the protestations of a drummer. Artists would only educate their own sons or relatives, and they took care that they should be upright men such as might unhesitatingly be entrusted with large financial interests." He goes on to say, "But when I realize how this noble calling is the plaything of the ignorant, of men who know nothing of architecture, nay, even of practical building, then indeed am I driven to approve the action of those men of property who trust to the works on the subject and do their building themselves; if it is to be a case of an ignorant architect, at least let him spend his money on his own contrivances. And so it comes about that though you would never expect to come across an amateur cobbler, or an amateur anything else where skill is required, the amateur architect is common enough."

It may not be quite in keeping with the methods of modern business to wait for recognition without making any worthy effort to obtain it, but in other respects the observations of Vitruvius may be a guide for the young architect in his professional conduct.

THIS journal has so persistently and consistently advocated measures of fire prevention that it is a special pleasure to notice the recently published work on the subject of automatic sprinklers by Mr. Gorham Dana.* The automatic sprinkler is almost the only absolutely dependable means of preventing the spread of fire, and the device itself, as now perfected, practically never fails to accomplish its purpose when properly installed and maintained. With standard equipment and proper maintenance and adequate water supply, the automatic sprinkler is practically certain to control any fire that may occur, and even greater than the protection of property is the safe-guarding of human life. The records of the Factory Mutual Insurance Company show that in thirty-eight years out of 1,500,000 people employed in covered risks only five lost their lives because of fire, and the records seem to show that within the past ten years there has not been a single loss of life due to a fire in a building properly protected by sprinklers.

The whole trend of modern legislation and fire prevention activity is towards the increasing use of this most excellent device and the rendering of it compulsory by law. Mr. Dana's book is a very admirable presentation of all the facts connected with the origin and development and present use of this system. The subject matter is presented clearly and in a readily accessible form, the illustrations are most ample, the statistics are sufficiently complete to answer every practical purpose, and the book is reinforced by a very carefully prepared index. It may not be a book for light reading, but it is certainly a valuable addition to the library of every architect, engineer, and real estate owner, and Mr. Dana is to be commended for the thoroughness with which he has treated the subject.

THE widely different opinions of the medical profession make it very hard and often impossible for architects to decide as to the necessities and requirements of mechanical ventilation of hospital buildings.

The questions, "Is artificial or mechanical ventilation harmful or beneficial?" and "Is it a step forward or backward?" should be definitely answered. Mr. T. J. Van der Bent has written a very timely article upon this subject in the April number of *The Modern Hospital*. The points raised are interesting and instructive and should stir up some action among architects and engineers. From his experience he cites as facts that:

1. The need of ventilation in hospitals is variable and dependent on the climate, the location, and general design.

2. Under certain weather conditions and during a certain number of days per year, air in hospital wards will be stagnant without mechanical ventilation, window openings not being sufficient to create draft. The number of days that this happens is dependent on the three factors named above.

3. Even if theoretically possible to obtain sufficient ventilation through windows, these windows will not be opened during severe weather conditions, and, if opened at all, not sufficiently to obtain the required amount of fresh air.

4. The best installation can be made useless or unsatisfactory if run by an incapable engineer.

As pointed out by Mr. Van der Bent, it would be very satisfactory from a purely architectural point of view to omit all consideration of mechanical ventilation in buildings if it can be considered unnecessary. The complications which arise from the installation of a mechanical ventilation plant are extremely annoying and expensive for the architect, and frequently interfere with the most successful solution of other very desirable features. Aside from the cost of such plants themselves, they materially increase the area of a building and therefore its cost. If unnecessary, the money expended on the plant would be better spent otherwise, and the increased area of the building devoted to other purposes.

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* "Automatic Sprinkler Protection," by Gorham Dana, S.B. Published by Thomas Groom & Co., Boston.